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EDITORIAL.

ENLARGEMENT OF THE ADULT THYMUS.

In view of the reawakened interest in the above subject, as evidenced by the recent publication of articles on the subject, it will not be considered otherwise than appropriate for us to call attention to what may be termed pioneer work in that line by local confrères. It is always good to keep the record straight.

In the March 6, 1909, number of *The Medical Record*, Dr. Otto Lerch, of this city, published a preliminary report on "The Enlargement of the Thymus Associated with Nervous Symptoms." In June of the same year there appeared in this JOURNAL a paper entitled "Thymokesis," by Dr. A. E. Fossier, also of this city, which had been read before the Orleans Parish Medical Society. Thymokesis was defined as meaning an enlargement not of the glandular tissue proper, but of its so-called relict found in adult life, when distended with blood. It was claimed that the gland could be "distinctly and sharply outlined by percussion" at all ages, even up to the extreme old age. In a good number of individuals, it was stated, a more or less pronounced bulging may be noticed which corresponds to the percussion outline, while in others percussion dullness denotes

swollen borders. Attention was called to the fact that a change of the patient's position causes a variation in the area of dullness, probably due to the greater or lesser degree of the amount of blood and lymph present in the gland. The severity of the symptoms was found to correspond to the enlargement of the gland. The nervous condition, as evidenced by neurasthenic phenomena, including irritability, disturbed sensations, easy fatigue, tremor, slight ptosis, etc., is explained as being due to "intracranial venous congestion, over-stimulation of the vagus and sympathetic, and pressure upon tracheal vessels and nerves in a narrow, unyielding aperture."

Attention is called to this subject, and the above quotations are presented in order that due credit be given to our local friends now that the question is being handled almost as if nothing had ever been said about it.
officer and where he did heroic work during the epidemic of influenza.

NEW ORLEANS PUBLIC HEALTH INSTITUTE.

Under the auspices of the United States Public Health Service and the Louisiana State Board of Health a course of lectures was given at the Athenaeum during five days from January 9 to 13, 1922.

The attendance was not as large as the effort justified but the audience made up in interest and attention what it may have lacked in numbers, and the result, all in all, was quite worth while.

The list of subjects was quite extensive, including the venereal diseases, other communicable diseases, cancer, hygiene in its various departments, social work and sanitary engineering. The Institute was intended to interest and educate in the subjects designated, physicians and medical students, but especially state and municipal officials, nurses, social workers and those connected with industrial enterprises.

THE FUCHS LECTURES.

New Orleans was honored by the visit of Professor Fuchs, of Vienna, one of the leading authorities in ophthalmology to-

day, who delivered two lectures on his special line at the Hutchinson Memorial and the Richardson Memorial, respectively, on January 11 and 13.

He was enthusiastically received and made a deep impression on his hearers. Those who had known him, many years ago, in his home and at the height of his activity and prosperity, found him the same plain, pleasant, unassuming gentleman and teacher, but could not fail to perceive an added note of sadness in his expression, no doubt due to the many vicissitudes said to have been experienced by him during and since the world war.

We hope his reception will be as cordial elsewhere as it was here, and that this eminent man will be largely repaid in many ways for his tour in this country.

DR. SAMUEL R. OLLIPHANT.

On December 26, in the neighboring town of Lafayette, there passed away Dr. Samuel Rutherford Olliphant, a good man, a true physician, and a former public servant, worthy of an honored memory in the State of Louisiana.

Born in our sister State of Mississippi, Olliphant came to New Orleans to complete his medical education in our great university, and began his life work here. After a few years service on the visiting staff of the Charity Hospital, he was appointed to the State Board of Health, which in those days also exercised municipal functions. In April, 1890, he became president of the board, at the head of which he remained until February, 1898, when to relieve the governor of any possible embarrassment, the members of the State Board of Health resigned following the yellow fever invasion of 1897.

When we remember that sanitary science was in its infancy in those days, the record of progress made by the Board of Health under the Olliphant regime is eloquent of faithful work accomplished with scanty means and in the face of public indifference.

That board was the first to station its own medical inspectors at tropical fruit ports and to compel steamers of the regular passenger lines in that trade to carry physicians selected by the

board, thereby guarding against the danger of mild cases of fever slipping past quarantine. Among notable items of progress in municipal work may be mentioned: The establishment of a chemical laboratory, fully equipped and under the direction of a chemist of national reputation.

Making the inspection of slaughter-houses real and efficient by placing a high-grade veterinarian in charge instead of a political appointee.

Establishing a service for the inspection of food in the city markets.

Improvement of the milk-inspection service, previously lax and faulty.

Founding a bacteriological laboratory, then a novelty except in the very large cities, with the justly celebrated Dr. P. E. Archinard in personal charge, and later sending him to Europe to study the production and administration of diphtheria antitoxine at the fountain head.

While thus placing mile-stones of progress in municipal sanitation, all the maritime approaches to New Orleans were so well guarded that the most searching investigation has never been able to show any infection to have entered by those routes. Unfortunately the gulf coast of Mississippi, supposedly under protection by federal quarantine, became infected with yellow fever masquerading as dengue, in the summer of 1897, with the result that our ancient enemy slipped in "by the back door" from Ocean Springs, where, as was later proven, filibusters had established headquarters in the home of a patriotic Cuban lady, who afterward admitted that a case of yellow fever had occurred there in the spring of 1897.

In that way New Orleans and Mobile became infected, and the public, reasoning only that the Board of Health had failed to keep the fever out, clamored for the resignation of those whom they thus blamed. Dr. Olliphant, conscious of having done his duty, moved to New York, where he easily established himself, being absorbed as one of the staff of the DeMilt hospital, with a suburban residence at Mt. Vernon, a "village" of fifty thousand people, by whose vote he was chosen local health

With gradually failing health, this faithful servant returned to his own people to die, attended in his last hours by his wife and her devoted family. All honor to his memory!

(No paper published or to be publisheed in any other medical journal will be accepted for this deparment. All papers must be in the hands of the Editors on the tenth day of the month preceding thnt in which they are expeceted to appear. Reprints may be had at reasonable rates if a WRITTEN order for the same accompany the paper.)

ENCIRCLING OF A FUSIFORM ANEURYSM OF THE ASCENDING PORTION OF THE AORTA.*

(Notes of Doctor Tuffier, Faculty of Paris, A l'Hôpital Beaujon.)

Translated from Archives Franco-Belges de Chirurgie, by Dr. H. E. BERNADAS.

Operation: Incision of skin and subcutaneous tissues; I incise the Pectoralis Major and come to the first and second intercostal spaces. Section of second rib. I separate this and place a retractor. I now have a large opening. Introducing my finger behind the sternum, I immediately feel the arch of the aorta. The tumefaction of the aneurysm extends more toward the right.

I now cut through the sternum and separate the fragments; this gives me a large operative field. I dissect the cellular tissues to the aorta, taking special care to avoid the veins; without hesitation I now separate its tunic. The hemostasis is perfect. We now see the pulsation of the large arterial vessels. I now separate the aorta from its relations to the vena cava on one side and the pulmonary artery on the other. In endeavoring to encircle the aorta in the rear, with my finger, I encounter a partition situated on a level with the aortic concavity, a rigid septum which I lack the courage to break through, fearing a hypothetical bronchial artery, whose hemorrhage, following a rupture, would be difficult to control. Through a small opening in this partition I am able to introduce my finger and at this junction a curved needle and finally a catgut strand. This done, from the right thigh of the patient I remove a quadrilateral segment of fascia lata, which I will use to strengthen the aneurysmal walls. Two bridles placed in the angles of this segment permit me to attempt the encircling of the aneurysm, by tying these bridles to the catgut which I have just passed around the aorta.

*Read before the Orleans Parish Medical Society, November 14, 1921.

But the opening in the fibrous partition is not sufficient to permit the passage of the segment of fascia lata. Under these conditions I tie the thread around the aorta, narrowing its caliber, thus diminishing the inter-aneurysmal pressure. Subsequently, the segment of fascia lata having been stretched and sutured to the anterior wall of the aorta, thus doubling and consolidating the wall, I have a diminished tension in the aorta and a supported anterior wall.

All relations are now restored, layer by layer. The sternal fragments are approximated and sutured with catgut.

The day following the operation I made note of several errors in the technic employed. *First*, that of having created and permitted to remain behind, a right pneumo-thorax; *second*, not having replaced the sternum perfectly in its position; moreover, the numerous doctors who assisted this operation, leaned over the operative field and infected it.

FACTS ABSTRACTED FROM ARTICLE BY M. L. RENON, professeur a la Faculté de Medecine de Paris, membre de l'Académie de Médecine

Patient was a female, 62 years old, negative Wassermann, syphilitic. Operated on May 14, 1914; died October 28, 1920, six and a half years after operation, from the recurrence of an inoperable uterine cancer, which had been rendered operable by radium, and a pan-hystectomy done April 22, 1920. Patient derived a certain benefit from operation from the symptomatic viewpoint and the viewpoint of her aneurysm. General condition better, intra-thoracic pains diminished, although they did not entirely disappear and there were occasional paroxysms of pain. The benefit obtained was probably due to a relief of the mediastinitis by dissection of the aneurysms. The reduction in size of aneurysm, at first obtained, was not permanent, and in 1920 the diminution over its former size was not very notable.

	1914	
Tranverse diameter	*Cord*	*Ascending Aorta*
6.2	4.2	4
	1920	
5.7	3.4	4.2

Rénon concludes with looking forward to the day, quoting M. Vaquez, "Where the domain of cardiac intervention will reach to medical cardiac lesions, and where a surgeon, blamed

today for too rash interference, will probably be found culpable for having refused these resources to patients irremediably lost."

BLOOD TRANSFUSION IN OBSTETRICS.*

By E. L. KING, A. B., M. D., F. A. C. S., Instructor in Obstetrics, College of Medicine, Tulane University of Louisiana.

Transfusion of blood has been for some time a therapeutic procedure of proved value, and it is routinely employed in the treatment of severe hemorrhage. Direct transfusion is theoretically preferable, but technically more difficult, so that the indirect, or citrate, method is the one generally employed. It is often followed by a reaction of varying intensity, in spite of the compatibility of the bloods. This occurs, according to Polak, in about 60% of the cases. The objection has also been raised that, due to the manipulations and to the use of glass containers, rubber tubing, etc., obscure and complicated changes take place in the blood which make it less suitable than blood directly transfused. Hence, Bernheim especially has of late been advocating the direct, rather than the indirect, method. The cases forming the basis of this report were handled by the indirect method, with one rather mild reaction. The donor's and the recipient's sera and corpuscles were tested against each other, as it has been found that occasionally donors pronounced safe on the basis of grouping according to the methods of Moss and others have not proved satisfactory clinically. The testing is quickly done by a serologist, and the report is ready by the time the preparations for transfusions are made. We have employed transfusions in four classes of cases: 1, hemorrhage; 2, puerpal infections; 3, hemorrhagic diseases of the newborn; 4, pernicious vomiting. The indications in case of profuse hemorrhage is clear, and we will consider that group first.

Case 1. Severe postpartum hemorrhage after footling delivery in a primipara. Packing controlled the bleeding, but her condition was very grave. 500 c.c. of blood were donated by a nurse who was a close friend of the patient. Recovery was uneventful.

Case 2. Profuse bleeding in a case of hydatid mole. Patient's mother gave 500 c.c. of blood. Condition changed from very

*Read before the Orleans Parish Medical Society, November 14, 1921.

critical to satisfactory. The cervix was partly dilated by a bag, was incised, and the uterus was emptied. Recovery.

Case 3. Extra-uterine pregnancy. Admitted by me for operation. Sudden secondary rupture of the hematoma, with free bleeding. She was operated upon by Dr. W. O'D. Jones, as the interne could not locate me. Her condition was extremely grave. She was transfused, her husband being the donor. Recovery was uneventful.

In the second group—i. e., puerperal blood-stream infection—the indication is not so generally admitted. Poor results have been reported following transfusion in surgical infections by several observers. Polak, however, contends that, in these poor results, the failures were due to the fact that transfusion was performed as a last resort and was not used early enough. He reasons that early and repeated small transfusions are preferable, and bases his opinion on the following arguments: Transfusion lessens the secondary anemia; 2, it supplies normally active leucocytes for temporary defense; 3, it permanently raises the blood pressure, "which helps to restore the functional activity of the organs which bear the brunt of the defense." He claims that the real value of transfusion is the stimulation of the tissues to increased cellular proliferation, and that the use of large amounts of blood is not wise. The hemoglobin percentage is raised and the leucocyte count is increased, but both rapidly fall, hence Polak claims that, by resorting to the transfusion of 250 to 300 c.c. of blood every third day (instead of the usual 500 c.c.), the leucocytosis can be maintained with a consequent more favorable prognosis.

Following his suggestions, we have transfused three patients who were desperately ill. One had a streptococcic bacteremia, one a colon bacillus blood-stream infection, while the third was suffering from pelvic thrombophlebitis with apparently intermittent bacteremia, though we were never so fortunate as to secure a positive blood culture. The details follow:

Case 1. Streptococcic bacteremia, no pelvic lesions, infectious arthritis of left wrist, chills and septic temperature. The probable etiology was as follows: vaginal examination without asepsis in a clinic the day before delivery, premature rupture of the membranes, and finally a tub bath after rupture of the membranes. Her condition grew progressively worse, the temperature varying between 104 degrees and normal. 250 c.c. of citrated blood were transfused from husband on the fourteenth day. The improvement was immediate, and was so marked that the transfusion was not repeated on the third day, as advised byPolak. There was a gradual fall of the temperature, till it reached normal on the 24th day. On the thirty-third day the temperature began to rise again, reaching 104 or 104.5 degrees daily. 250 c.c. of blood were transfused from the

same donor on the fortieth day. This was followed by a reaction, her temperature reaching 104. The temperature became normal on the forty-second day and continued thus until the forty-eighth day; after that she had irregular mild fever for about two weeks, but only one more chill. She was discharged after two weeks of normal temperature and is at present in excellent health and is pregnant again.

Case 2. Colon bacillus bacteremia, following prolonged second stage prior to admission, low forceps delivery of a dead fetus, and manual removal of the retained placenta. She had chills and septic temperature; there were no local pelvic lesions. She was transfused from her mother, but it was too late, as the patient died the next day; not, however, from the effects of the transfusion. If it had been done earlier, she might have been saved.

Case 3. Puerperal thrombophlebitis of pelvic veins, following manual removal of the retained placenta prior to admission. The patient also had a heavy hookworm infection. She had repeated chills, at times three or four per day, with temperature going to 104 or 105 degrees. The husband's blood was not compatible. Blood was finally obtained from a healthy obstetrical patient awaiting delivery. There was no reaction. Immediate subjective improvement followed, but fever persisted for three days; after that it became normal and remained so. No more transfusion was needed. It may be that she was practically well and about ready to stop having chills when transfused, but the improvement was certainly striking.

The third subdivision deals with the obscure condition known as hemorrhagic disease of the newborn, often incorrectly called hemophilia of the newborn. It develops within the first week of life, is not traumatic, most frequently follows spontaneous delivery, and is characterized by multiple hemmorrhages, such as subcutaneous ecchymoses, epistaxis, hematemesis, melena, hemorrhage from umbilicus, vagina, penis, etc. Holt states emphatically that it is *not* a manifestation of hemophilia, and gives the following reasons: 1, of 576 cases of hemophilia collected by Grandidier, only twelve have a history of hemorrhage when the cord separated; 2, symptoms of hemophilia very rarely appear before the first or the second year; 3, there are thirteen male hemophiliacs to one female, while in hemorrhagic diseases of the newborn the males are only slightly more numerous; 4, hemorrhagic disease of the newborn is self-limited, it only lasts a few days or weeks, and the patient either dies or recovers. They can be operated upon later without an unusual amount of hemorrhage being noticed. Furthermore, hemophilia is often hereditary, while the other condition is not. The frequency of the disease is reported from various clinics as varying from 6% to 8%; at Charity Hospital the former figure would be approximately correct. Fetal syphilis has been ad-

vanced by some as an etiological factor, but it is found in only a small percentage of the cases. Holt states that it is often associated with fetal sepsis, but this is by no means invariable. Bacteriological study of many cases has been uniformly negative. Brewer thinks that it is a congenital malformation of the blood of unknown chemical nature. The prognosis is very grave, the mortality being 79% in 709 cases collected by Townsend.

Medical treatment of this condition is very unsatisfactory. Of eighteen cases at the New York Lying-In Hospital treated medically (before 1910) seventeen died. J. E. Welch then began to use human serum there and cured twelve cases in succession. He used 10 c.c. or more subcutaneously three times a day. The mother's whole blood is often used, one-half to one ounce being injected under the skin of the back or into the buttocks. Transfusion was first used by Carrel and Brewer (quoted by Crile), with wonderful results. As Brewer stated, there was no convalescence; the baby was almost moribund before the transfusion, and was in perfect health immediately thereafter. They used the direct method, suturing the baby's right popliteal vein to the father's left radial artery. H. Woltman (*Jour. Am. Med. Assn.*, about one and one-half years ago) reported a case cured by the injection of 60 c.c. of citrated paternal blood into the baby's median basilic vein. Another case was reported in the same journal several years ago (I have not located the exact reference), in which direct transfusion was performed with cure, using the baby's femoral vein. Doubtless many other cases can be found in the literature.

In view of the unsatisfactory results of medical treatment, I decided to try transfusion on the next case that presented itself. The methods requiring the use of the veins appeared to be technically rather difficult, so I consulted our pediatric friends about the use of the anterior fontanelle, which they puncture routinely in obtaining blood for the Wassermann reaction and in administering salvarsan. They assured me that it was quite easy, which I verified by dissecting the fontanelle and the superior longitudinal sinus of a stillborn baby. I cannot say whether the fontanelle has been used by others for transfusion. The only danger is that of going too far and injecting the blood beneath the dura; this can be easily avoided.

Baby W. B. was admitted when three days old. He began to bleed the day after delivery from the umbilicus. On admission there was oozing from the umbilicus, melena, and extensive ecchymoses under the skin of the neck, the chest, the scalp, the right side of the forehead, and the right upper eyelid. The baby was fretful, anemic, and had irregular fever. Calcium lactate was given, without benefit. The mother's blood was compatible, so 50 c.c. was injected (citrate method), using a large glass syringe. The baby was pinned in a sheet, its head was slightly extended over the edge of the table and steadied by a nurse, and the needle was introduced into the center of the fontanelle and directed obliquly backward. The sinus was easily entered and blood flowed from the needle. The syringe was attached and the blood was slowly injected. The blood had been obtained with some difficulty from the mother and showed some tendency to clot in spite of the sodium citrate, so it was filtered through gauze before being injected. Thus may be explained our partial failure, for, while the baby was markedly improved, some oozing continued from the umbilicus, which was later transfixed with a needle, around which a ligature was tightly wound. The next day, as there was still a slight ooze, 10 c.c. of horse serum was administered subcutaneously, following a suggestion by Dr. Duval. There was no further bleeding, the ecchymoses disappeared, and the baby was discharged on the eighteenth day. A later report states that the child is in excellent condition.

As these cases are not common, none of us see many of them, but I can recall several that have died; also two rather mild cases that have recovered under medical treatment. Dr. Emmett Irwin has since transfused another baby at the Charity Hospital by this method, with immediate cessation of the bleeding. The child was exsanguinated on admission, however, having been bleeding for four days, and it did not recover.

I have transfused one case of pernicious vomiting, thinking that perhaps that a supply of fresh blood would help the patient to overcome her toxemia. She was *in extremis*, having been ill for about two months, and died about thirty hours later, in spite of delivery by vaginal hysterotomy. It seems to me, however, that transfusion should be of value in these cases.

While this series is small, I feel that our results have been encouraging, and that we are justified in continuing the use of transfusion along the lines indicated above. I wish to thank the various members of the interne staff at the Charity Hospital who have been on the obstetrical service for their invaluable aid and enthusiastic co-operation.

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DISCUSSION.

Dr. R. D'Aunoy: Dr. King has opened for discussion a very interesting and important subject. It appears as if in our community the valuable procedure of blood transfusion is not made use of as often as the results achieved following its use would warrant. The records of our great Charity Hospital show that during the last two years nineteen transfusions were performed. I am informed that at Touro Infirmary comparatively few transfusions are performed. Usually difficulty is encountered in securing donors; even with near and dear relatives involved many people hesitate to act as donors. At a recent clinical meeting of our Society held in conjunction with the Charity Hospital staff, Dr. Guthrie made a plea to the hospital authorities to secure a list of professional donors. Such a suggestion, if adopted, would help greatly to popularize transfusion in our medical center. These donors would be readily available, their blood types known and all laboratory tests previously performed, causing little loss of time to our physicians desiring to make use of transfusions. The methods of transfusion are at the present time, as Dr. King has already pointed out, indeed simple. Undoubtedly the citrate method is, and deservingly so, the most popular. I have seen numerous successful transfusions performed with a 20 ml. syringe and a flask of sterile citrate solution. The typing of donors and recipients of blood, due to the contributions of Moss and others, is at present a simple matter. Commercial houses supply the necessary typing sera with full instructions as to their use, and the most elaborate equipment the physician needs is a glass slide and a blood sticker in order to properly determine the compatibility of various bloods. Speaking from an experience of over two hundred (200) blood typings and transfusions, I can say that I have never seen any untoward results following the administration of properly typed blood. If the blood is mixed with a small portion of citrate solution before being brought in contact with the typing sera, the results are always clear-cut and need never be mistaken.

In cases of infections, the at times marvelous results noted after transfusions are not readily explained. The views held by Polak and outlined by Dr. King do not appear entirely explanatory. The comparatively few leucocytes introduced with normal blood can hardly have such far reaching powers. Again, phagocytosis is most probably not the only factor concerned in infection. If we resort to the ideas of Ehrlich in explaining the factors concerned in immunity, we note that the combatting of infections is due in great part to the power somatic cells have of producing immune bodies, which immune bodies help in either directly counteracting the poisonous product elaborated by micro-organisms, inhibiting the growth of micro-organisms, or else, in causing actual lysis or destruction of micro-organisms. The latter class of immune bodies are the bactericidins and the bacteriolysins, which bind their specific antigen to alexin, allowing this latter constituent of normal blood to cause the actual inhibition or lysis of the baneful organism. Alexin is affected by a number of

factors, socalled complementoid and anti-complimentary bodies being readily formed. It may be that the amount of alexin which we introduce with normal blood serves to re-inactivate complementoid bodies as happens so often in vitro. Again, the relatively large amount of alexin introduced may help by its own direct action to combat the infection. Undoubtedly in addition normal immune bodies present in all normal bloods exert considerable influence in overcoming the infection. The subject is one which is but imperfectly understood and we can but offer fanciful ideas in attempting an explanation.

Dr. E. A. Ficklen: Although transfusion has a certain usefulness in the treatment of shocks, infection, pernicious anemia and other pathological conditions, the most dramatic results are obtained in hemorrhage. More than a mere mechanical result is obtained, as a transfusion of 200 c.c. of blood may transform a patient almost moribund from a severe hemorrhage into a good surgical risk. Ten months ago I transfused a case of purpura rheumatica hemorrhagica. There was a change for the better in twelve hours and ultimate cure. No more hemorrhage occurred and the pain was much lessened. I join Dr. King and Dr. D'Aunoy in their plea for a more widespread utilization of this procedure.

Dr. F. W. Parham: Regarding the compatibility of bloods: Last January I had occaion to transfuse a case for repeated hemorrhage. We did not know whether it was due to previous loss of blood, but finally concluded it was a case of secondary anemia. I transfused this man and we had a most violent reaction. Whether there was some mistake in the grouping of the bloods, or in the technic, or something else occurred, we did not know. That is why I say that, although we may have bloods of the same groups to mix, we may have trouble occasionally, due to some of these minor agglutinins which do not show in the grouping tests. Therefore, the individuals ought to be tested against each other. If we are in a great hurry to transfuse the patient, and have a number of donors, we would take group four, unless one of the prospective donors was in the same group as the recipient, but, if we have time, I think we ought to, if possible, test one blood against the other.

Pemberton, at the Mayo Clinics, reported 1,000 cases; Lewisohn 200, and Garbat 100, by the citrate method, making a total of 1,300 cases transfused without mishap. Yet, last January, in my own experience, as stated, I had a very serious result in a case where the donor was in group 4. I overcame this by giving ether but not to surgical anesthesia.

There is less danger where both donor and recipient are in the same group. In emergency, the donor may be taken from the universal donor group 4, but where circumstances permit, it is safest to test one blood against the other.

Dr. E. L. King (Closing): I am glad that the speakers emphasized the necessity of testing the bloods directly against each other, in addition to the grouping.

Dr. Ficklen states that he is of the opinion that there are no female hemophiliacs. Holt is the authority from which I obtained the figures: "thirteen males to each female hemophiliac."

As regards "reaction," we must bear in mind that at times the same may be due to the rubber tubing used in the transfusion. This has been emphasized by the workers at Mayo Clinics in connection with the administration of Salvarsan.

REPORT OF A CASE OF RAYNAUD'S DISEASE.*

Dr. R. S. CRICHLOW, A. A. Surgeon, U. S. P. H. S.

In 1862 there appeared an article in *L'Asphyxie Locale,* a medical journal published in Paris, France, by Dr. Raynaud, setting forth certain symptoms or syndrome that he had observed in conditions which he regarded as vasomotor neuroses; namely, "Attacks of cold, dead bloodlessness in the fingers or toes as a result of exposure to cold or to emotional excitement (local syncope). In the more advanced cases there are capillary congestion and mottled and livid swelling (local asphyxia). Later, still in more advanced cases, thrombosis and resulting gangrene which is usually symmetrical."

The case that I am reporting tonight includes all the above stages and has for its causative factor exposure to cold and wet together with mental strain and physical exertion.

The patient in question came under my observation November 26, 1919, when I was called to his home for the purpose of making an examination of him and to refer him for treatment. He has been under my observation and treatment since that time, having received surgical treatment from Dr. Carroll Allen and later Dr. John Smyth, Surgical Consultant for Veterans' Bureau.

Mr. K., age 35, married. Occupation, carpenter. Mother living and well. Father died of infection at age 42, cause unknown. Three brothers; one living and well; two died in infancy, cause unknown. Three sisters, two living and well; one died in infancy, cause unknown. Previous history:: Usual diseases of childhood, malarial fever two years ago. No other illness. Venereal history negative.

Present illness: Began in September, 1918, about one mile from Verdun, France; six weeks previous to that time he had spent on the front during which time he had suffered from cold and especially his feet and legs wet. He first noticed numbness in his hands and feet, and later he noticed that at times his feet and hands were cold and clammy; these attacks were also associated with cramps in the legs. This condition gradually grew worse, and in November he noticed that toes of both feet were purplish in color. About the middle of November he started on a hike into Germany, and when about forty miles out of Luxemburg, he had to ask his captain to send him to the hospital on account of the marked swelling and redness of his legs and feet. He also stated that during October and November his feet were wet the greater part of the time, and that while they were not frozen, they frequently got pretty cold.

He was evacuated to Base Hospital 30 at Toul, France, where he was treated for six weeks, the principal treatment being hot and cold applied alternately to his feet. He returned to United States

*Read before the Orleans Parish Medical Society, November 14, 1921.

and was discharged April 30, 1919. During the latter part of March of that year he began to have trouble again with his feet and called a private physician under whose treatment he remained until seen by me.

Physical examination: Well developed, fairly-well nourished, in bed with feet wrapped in flannel and complaining of intense pain, more marked in left foot. Pulse 80, temp. 98.4. Teeth have some cavities; oral hygiene fair. Throat, tonsils somewhat enlarged. Chest round and long. Lungs, negative. Heart, negative. Blood pressure, systolic 130, diastolic 80. Abdomen, negative. Extremities, superficial veins very small, hands and feet cold and clammy. Toes of both feet markedly cyanotic; also moderate cyanosis of fingers of both hands. Watery blisters were beginning to form about the toenail of left little toe. The pain in left foot was so great that he could not bear the weight of the cover. He was referred to U. S. Marine Hospital, where he remained about two weeks, at which time he asked to be discharged. He then consulted Dr. Carroll Allen, who advised that he go to Touro for observation, and upon applying to the B. W. R. I. was sent to Touro. On account of gangrene having set in on the left little toe, on Jan. 4, 1920, Dr. Allen removed toe under local anesthesia. This not giving relief from the intense pain and because of beginning gangrene on great toe, left foot, on Jan. 8th, under local anesthesia, by nerve blocking and infiltration, he amputated foot at tarso-metatarsal articulation.

At the time of this amputation there was absence of pulse in the dorsalis pedis artery and very weak pulse in posterior tibial artery. While no adrenalin was used during operation, bleeding was so slight that no vessels had to be tied. Following this operation his condition seemed to improve and he was apparently free from pain until February 20, 1920, when he was again admitted to Touro and second toe of right foot removed on account of gangrene. In April of 1920 he was referred to Dr. John Smyth, Surgical Consultant for B. W. R. I., and was admitted to Hotel Dieu for treatment of gangrene of second finger, right hand, which he amputated at the metacarpo-phalangeal articulation. From this time an Esmarch constrictor was regularly applied to arms and legs once daily and in time he was taught how to use it. In May, 1920, he was admitted to Presbyterian Hospital on account of beginning gangrene of great toe, right foot. At this time there was an absence of the pulse in dorsalis pedis artery and also posterior tibial. Efforts were made to save any further operation except to treat the gangrene locally, but the patient continued to suffer so much pain and there being evidence of beginning gangrene on heel of right foot, it was decided to amputate the right leg at the lower third, which was done by Dr. Smyth on July 10, 1920.

Following this amputation, he made an uneventful recovery and for one year has been free from pain, and is now using an artificial appliance for both feet with very good success.

At each one of the hospitals where he was treated the routine laboratory examinations were made, with the following results: Wassermann, six times negative. Blood for malarial plasmodia, negative many times. Urine, negative, except at times contained a few granular casts. Blood counts ranged from 6000 to 8000 total whites with normal differential count. Hemaglobin from 70 to as low as 60. Blood pressure has ranged from systolic 90 to 140. to diastolic 70 to 80. Although he has had repeated negative Wassermanns he was given six doses of .6 gram of neosalvarsan while at Presbyterian Hospital. In medication he has been given large

quantities of sodium citrate, iron and potassium iodide in increasing doses. All medication has been stopped for four months, but he continues to use constriction about extremities once daily.

During the past year his circulation has markedly increased, especially in the fingers of both hands, as well as stumps of lower extremities. His general condition has improved and he has added 25 lbs. in weight.

DISCUSSION.

Dr. Jno. Smyth: When the patient was first seen by me, the second or middle finger of the right hand was hopelessly gangrenous, the other fingers white. The entire hand was bluish, mottled and cold, and the site of agonizing pain. Some pain was complained of in left hand and congestion was marked. Patient did not seem to be suffering seriously with his feet. The use of the constrictor (Cushing's suggestion) was followed by improvement in both hands. The subsequent trouble in his foot is believed to be due to infection in region of nail of great toe, the cleanliness of this being less than the hands, together with the lower resistance in the foot.

It is interesting to note that the constrictor produced violent pain, and, as improvement progressed, redness and abnormal heat, symptoms which usually accompany spontaneous recovery.

As the circulation improved and parts approached normal, the pain, redness and heat accompanying and immediately following application of constrictor, gradually became less marked.

Blood Wassermann was negative, and as patient refused to submit to spinal puncture, neosalvarsan was given. The neosalvarsan may have contributed toward recovery in this case, since it is known to affect gangrene favorably in other parts, notably in gangrene of the lungs, as reported by Reichman, Stepp and others, who claim it to be of great value in this condition, even in cases with negative Wassermann and in which no spirilli were found in the sputum. Pepper, in discussing these cases, states that "It seems improbable that all of these cases were actually cases of spirillosis, and yet it is equally as probable that it is in the limited group of cases that such treatmenet would be of greatest value."

Repeated examinations of blood failed to show any form of malarial parasite, yet he was given quinine because of the possibility of chronic malaria being a contributing factor.

Verneuil and Petit called attention to this as early as 1883. Almartine reports three cases in which the pathological examinations showed them to be due to "obliterating endarteritis." They showed the undoubted effect of the hematozoon in producing this endarteritis with subsequent gangrene. White, from experiences in Malta, states that paludal gangrene in the limbs practically always occurs in latent malaria, and in patients giving no history of malaria, the sub-tertian types. The possibilty of syphilis being a cause in these cases was eliminated by the fact that the Wassermann was negative in all instances, and histological examination showed nothing similar to the lesions met with in syphilis. Those cases presenting the clinical manifestations of Raynaud's Disease give a more favorable prognosis than those of the massive type.

After exhausting all means at our disposal, amputation was done only as a last resort, owing to the increasing gangrene-spreading infection and the intense pain which could not be controlled even by large doses of morphia.

REMOVAL OF FOREIGN BODIES FROM THE EYE.*

By H. DICKSON BRUNS, M. D., New Orleans.

Hardly do we think of the foreign bodies in relation to the eye than we inevitably and automatically perceive that all cases must be divided into those in which the foreign body is merely *on* the eye and those in which it is *in* the eye.

When a foreign body has penetrated into the eyeball the injury is so serious and the apparatus and skill necessary for its removal so special, that I hardly think it would be profitable to consider them now.

They must all, sooner or later, find their way into the hands of the oculist. These are the cases in which the magnet is used with ease to the operator and the least damage to the patient, for the penetrating body is usually of magnetic nature. The giant electro-magnet devised by Haab, of Zurich, for the removal of bodies from the interior of the eye, is so ponderous and expensive as to be an absurdly unprofitable investment even to the specialist, unless he lives in a region where accidents of this kind are of daily occurrence. Thus, the Haab magnet installed at the Eye, Ear, Nose and Throat Hospital of this city, still remains, so far as I know, the only one in the South. The instrument is strong enough to pull a bunch of keys from the clenched fingers approached to within three or four inches of the pole. It is needless to say, that so powerful an apparatus must be used with caution and only by one who has had some instruction. Otherwise, more damages may be done by the extraction, than by the entrance of the offending body. The rules for the use of the Haab magnet have been the subject of many disquisitions by numerous men, but I still follow those laid down by Haab as the result of his vast experience. One fundamental rule is that the patient should never be laid upon a table or seated with his head against an immovable head-rest. For, as the body leaves its bed under the influence of the magnet, a strange feeling, usually a sharp pang, is experienced, which causes the patient to pull away, and this more instantaneously diminishes the pull of the magnet and lessens the risk of undue violence, than any manoeuvre the surgeon can initiate. Hope of successful removal diminishes with the length

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of time the body has been in the eye. The sooner the magnet can be applied the less likelihood of the foreign body being fixed in its position by tissue changes. I say this because, while the Haab magnet is out of the question, were I a surgeon in a town of a few thousand inhabitants, I should certainly own a good hand magnet. Not with the idea of attempting extraction of foreign bodies from within the eyeball, but for the purpose of pulling out those stuck in the tissues.

There is probably no small operation more embarrassing than the removal of a non-magnetic splinter which has penetrated the cornea; for the difficulty of extraction is enhanced by the obligation to leave behind the least possible scar in a membrane, the transparency of which is all important. If the point of such a splinter enters, or almost enters the anterior chamber, our efforts to seize its outer end may only lead to our driving it deeper and deeper, into the iris, perhaps into the lens. The accepted practice in such cases is to enter a keratome, a tri-angular lance knife, through the margin of the cornea (limbus) while the eyeball is steadied with a fixation forceps. The point of the keratome is held against the penetrating end of the splinter to prevent its being driven in further by our efforts to lay hold of its outer end with the fine forceps we have substituted for the fixation forceps. This method is, of course, impossible if the end of the splinter has penetrated the iris and lens as well as the cornea. In this case we must make an incision embracing the point of entrance of the splinter. With a Graefe knife, the miniature knife like a steel knitting needle flattened and made sharper than a razor, we tranfix the cornea at a few mm. from the wound, pass the knife across the anterior chamber, bring it out at a point about the same distance on the other side of the point of penetration, and cut out. The end of the splinter now lies free in the incision, and the aqueous having escaped and the cornea collapsed, we can lay hold upon its end and draw it out. These are the general principles that guide us in such cases, but as they are curious in their variety the surgeon must often use ingenuity and invention. It is clear these procedures are delicate and to unpracticed hands difficult, and the instruments not usually found in an ordinary armamentarium. Prolapse of the iris, moreover, often happens and calls for iridectomy. For it is

a sound principle that a prolapsed iris should be cut away, not reduced, lest it carry with it something pathogenic from the conjunctiva into the anterior chamber. But the whole scene changes if the penetrating body be magnetic, as it is in the great majority of cases. For the best hand magnets, even the small ones, are able to extract most metallic slivers successfully. The magnet also removes the small bits of iron which so often enter the eyes of workmen, penetrating only the epithelium, or at worst, the superficial layers of the cornea, with the least amount of traumatism. And traumatism, it cannot be too often repeated, is fatal to the function of the cornea. Peripheral scars are bad, but the smallest and faintest (nebula) at the centre may reduce a perfect eye to a very poor one. A central nebula imperceptible to the unaided eye may cut down vision from 20/15 to 20-70 or less.

These little foreign bodies on the cornea, however, are often cinders, bits of coal or are other matters not magnetizable. There is nothing for it then but removal by means of some instrument. This should be a match, a wooden tooth pick, a short applicator or probe with a bit of absorbent cotton tightly twisted about its end. It is surprising how many offending particles may be removed in this way without the least scratching of the cornea. Standing behind the patient, who sits facing the source of light, his head covered with a towel resting against the surgeon's chest, the operator holds the lids with the thumbs and forefinger of one hand. He directs the patient's gaze here or there until the foreign body is well seen; then, with a quick motion of the fingers, he makes the cotton-wrapped tip of his probe describe a short curve from above downwards, which strikes the body at the height of its convexity, at the point where the curve is tangent to the cornea, and ends with the probe tip well away from the eyeball. This should be done lightly at first, and then with a little more and more force, until we are convinced that the body cannot be removed in this way. On the other hand, if we are successful we should find the body sticking in the cotton on our applicator or in the lower conjunctival cul-de-sac where we knocked it. If properly done the cornea should not have been abraded in the slightest.

When not successful in this way, we are driven to the use of the more dangerous metallic instruments. The best of these

is probably the spud, flat on one side, rounded on the other, having a dull edge and no point. We may try to use it just as we did the cotton-tipped probe. Failing in this, we place the edge of the spud's point, the curved side, towards the cornea, above and against the foreign body, and with a quick, downward and outward flip try to turn it out of its bed. This, too, may fail if the body has penetrated a little distance, or if it be one of those hot bits struck off of beaten iron which the workmen call a "spark," which fuse themselves into the corneal surface. Then it becomes evident we shall have to resort to picking out what we have by this time come to regard as our enemy, with a sharp point. We may use an old Graefe knife, but it is better to keep for the purpose an old one of those flattened needles known as discission needles. Now our whole effort must be to remove the body as quickly as possible with the infliction of the least damage. We insert the point of our instrument from above, from below, from one side and then from the other and try with a quick snap-like pick to throw it out. If the foreign body be iron or a spark, its site will be marked by a narrow rust-colored ring or its whole bed be lightly stained. We need not be too insistent on removing every trace of these little brown rings, they will disappear in a few days, but if the staining be deep or unusually extensive, it had better be lightly scraped away. But the more we abrade the cornea the longer the time required for healing and the greater the danger of infection will be. Better leave a little stained tissue than to cause too widespread, especially too deep destruction. You know that so long as the epithelium only of the cornea is destroyed, repair takes place without a scar, but once the basement membrane—the membrane of Bowman—and the true substance of the cornea is penetrated a scar is bound to result.

Foreign bodies either on or in the conjunctiva will cause little anxiety. When on the conjunctiva, they are usually under the upper lid and are then commonly found in the minute sulcus that runs along and just behind the free edge of the lid. Every physician ought to learn to turn the lid without awkwardness on his part or distress on the patient's. This awkwardness usually arises from laying the match or pencil, or whatever may be used, flat upon the lid, so that it becomes caught when the lid has been evicted. It is the point of the instrument that

should be placed on the lid at the middle of the wrinkle that marks the upper edge of the tarsus. Then the lid must not be dragged over this point, but while it is pressed lightly down and out, the edge of the lid is drawn down, out and then up, so that it and the pencil point rotate around one another. Foreign bodies lying on the conjunctiva of the ball may be wiped off with the cotton-tipped application.

Foreign bodies in the conjunctiva of the tarsus must be picked out with the spud or sharp needle in the same way that those stuck in the cornea are removed. Small foreign bodies in the conjunctiva of the globe cannot be picked off, because their irregularities caught in the web-like tissue make this, as a rule, impossible. The body should be seized with small forceps, drawn well away from the ball and the retaining tissue cut through close to it by a snip of the scissors. No sutures are required to close the resulting gap unless it be extraordinarily large. The conjunctiva is highly elastic and spread evenly over the globe, so that, though it may look larger than we anticipated, the hole in its continuity can do nothing but heal. By reason of its vascularity, wound infection is very rare. If we doubt, however, it is easy to put in a few interrupted stitches of fine silk. We should be careful to catch up the conjunctiva only, undermine it freely with the points of the closed scissors, place our stitches not more than 1 mm. from the cut edge and tie them tightly as the strength of the thread permits. In this way they will cut out themselves, without further trouble, in three or four days. Black silk is used because it is more readily seen in case the sutures have to be removed.

Large foreign bodies which lie under the conjunctiva are plainly visible through it. They must be cut down upon, seized with forceps by the end and drawn out while with scissors we trim away closely the clinging tissue. If the body has penetrated the sclerotic coat, or passed along side of the eyeball into the orbit, it will cease to be visible beyond the point of penetration. When the injury is recent, bodies which have entered the orbit should be drawn out, the greatest care being taken to assure the removal of every particle. A probe should be used to keep the mouth of the track open so that discharge and healing from the bottom may be favored. If, on the contrary, the injury is two or three days, or more, old, the case had

best be put in the hands of someone of experience in dealing with such conditions. The chapter on foreign bodies in the orbit is a surprising one. Cases are recorded in which bodies of large size entered the orbit and remained there for months without causing any marked symptoms. For instance, there is a picture in Soelberg Wells' text book of part of a hat pin 3 and 3/10 inches long which remained in the orbit at least 52 weeks without the patient's being aware of it. In Noyes' book is the facsimile of the breech pin of a gun about 4½ inches long, thick and heavy in proportion, which lay in the orbit, its end protruding through the frontal plate into the anterior lobe of the brain, for five months without the victim being aware of what had become of it. I saw this case myself after the body had been extracted, before the boys' death, which took place slowly from abscess of the brain.

When the sclerotic has been opened, if the eye ball has been entered and extensively disorganized, or if the penetration involves the ciliary region, enucleation is the only proper course. Otherwise, we may close the scleral wound by silk sutures through the conjunctiva. Beginning half a centimetre beyond one end of the wound, we catch up the membrane and draw it away from the ball and start a whipped over or in and out continuous suture, which in the region of the cut is placed about 2 mm. from the cut edge of the conjunctiva and is carried 4 or 5 mm. again beyond the other end of the wound in the sclerotic. The silk used should not be too fine and the stitches must be placed well away from the edge of the cut conjunctiva, because the sclera heals none too quickly and we wish our suture to hold until we think it safe to remove it, say five to seven days. I have used this method in wounds of the sclera certainly a centimetre long with satisfaction. If we try to place our stitches in the sclerotic itself, we are sure to squeeze out more or less vitreous, for the membrane is tough and hard to suture and we are certain to pull the lips of the wound about.

Now, a few words about antisepsis and anesthesia. It should go without saying that from the removal of the smallest foreign body resting on the cornea, to the extraction of one that has penetrated the orbit, surgical cleanliness is necessary. We know that we cannot render our hands sterile and rubber gloves are impossible impediments in eye work. So we wash them well,

and if there is any chance of having to touch the field of operation, soak them in a bichloride solution. Otherwise, we may soil the cotton we roll upon our applicator, or if our instruments chance to be moist, contaminate a droplet that rolls down one of them into the eye. The instruments must, of course, be sterilized. Boiling for five minutes in water to which a little bicarbonate of soda has been added is the surest as well as the easiest way to accomplish this. If for any reason we cannot boil them, soaking in strong alcohol for ten minutes or more, followed by drawing them under strong pressure through a pledget of cotton wet with the fluid, is probably the best substitute. As to the eye, we know it cannot be made sterile and it is highly important not to irritate it before any operation by vain attempts. The method followed for many years in our clinic is to cleanse by repeated instillations of fresh 10% solutions of argyrol as repeatedly washed out with sterile normal salt solution or freshly made borax-boracic-camphor water wash we call "B. and C." This, judging from the results, kills or attenuates and inhibits any pathogenic organisms. At the last meeting of the American Ophthalmological Society, a report by Dr. ——— Lancaster, of ———, Pennsylvania, confirmed those of ? ? that argyrol is an efficient antiseptic, a fact, as I have said to you before, of which clinical observation has long since convinced me. I felt sure that in time it would be demonstrated in the laboratory. Fresh argyrol, in freshly made solution of a strength not greater than 15%, used not longer than two weeks at a time, does not smart or iritate the eye. Its diffusibility is remarkable; it penetrates everywhere; it dislodges old secretions from the lachrymal sac and takes their place; it clots and stains every roll, shred and speck of mucus making them plainly visible and thus renders yeoman service in cleansing the conjunctival sac.

We who had to operate in the days before antisepsis, well know the wonderful resistance of the human eye to infection. All this painstaking is but an effort to save the hundredth eye. Workmen with dirty hands and still worse penknives, or other unclean instruments, will continue to pick foreign bodies from one another's eyes, to rub the injured organ with filthy handkerchiefs, and in most cases escape the natural consequences. But every now and then, even after a clean removal, infection

occurs. There are few things more distressing than to see an eye lost in this way by a man dependent on his daily labor for his daily bread. We have a rule, therefore, in the clinic of the Eye, Ear, Nose and Throat Hospital that after removal of a foreign body from the cornea and thorough cleansing, the eye must be sealed up by a small cotton pad between two layers of gauze cemented to the brow and rim of the orbit with collodion—the Blanco dressing. This is removed every day and renewed after cleansing the eye until the abrasion ceases to stain with fluorescine. When the abrasion is slight and the patient cleanly and intelligent, we order the argyrol solution to be instilled every hour until redness and the rough sensation on winking have diappeared. Bathing the closed eye frequently with hot—not warm—water favors this and gives comfort.

In the days before cocaine removal of a foreign body was painful, often difficult, and required much more skill than now. A drop or two of a 4 per cent solution of this miracle-working drug in the eye and pain is abolished. It is best to instill a drop at intervals of about two minutes two or three times before the operation, and if this is prolonged, at intervals during its performance. Must I add that the solution should be prepared with distilled water, or, if not fresh, should have been well sealed and put away?

Finally, I should say something about finding a foreign body in an eye. Perhaps this should have come first, for "first catch your hare" is a time-honored recipe for a ragout. There are two adjuvants to this search for "matter out of place" which are quite indispensable to perfect assurance that our pursuit has not been eluded in any case. One, the Berger binocular loupe and its accessory condensing lens, the other the 5% solution of fluorescine prepared by Merck. They are so useful and so inexpensive that I am surprised they are not to be found in the office of every physician who lives more than a mile away from a professed oculist. For the binocular magnifier greatly increases the information we derive from the examination of any small lesion; the fluorescine solution saves us from a mistake that may seldom occur, it is true, but is most discomforting when it does. Foreign bodies on the conjunctiva are, as a rule, easily seen. Seldom on the conjunctiva of the globe, they are, when so situated, usually conspicuous by contrast with the

white sclera and by some little redness about their site. Not infrequently, on drawing down the lower lid, we find the body fallen into the lower cul-de-sac. But their most common lodgment is, as I have stated, under the upper lid in the minute sulcus just within its free edge. Small particles on the cornea are, on the contrary, often hard to see. They should, if possible, be first looked for by good daylight. With the Berger loupe on our head we concentrate the light on the surface of the cornea with the condensing lens held at its focal distance, commonly three or four inches, from that membrane. By gentle movements of the lens we play the light little by little over the whole corneal surface. Sometimes the particle is so tiny that it cannot be seen itself and yet it is revealed by the break it causes in the sheen of the light condensed on the corneal surface. Just as you have all seen an otherwise imperceptible twig projecting from the smooth surface of a pond shown by the disturbance of the sunlight water mirror. Should this fail us we resort to our fluorescine. A drop of the solution is instilled and allowed to soak in for three or four minutes while the lids are kept closed. Then all traces of the staining fluid are washed away by repeated flushings with the B. and C. solution. Some patience is required, for the intensity and diffusibility of the fluorescine is prodigious. Now, the presence of the body is revealed by a very fine bright green ring surrounding it. Or it may be that the body has already become detached and has been swept away by the tears and the abrasion at its former site is shown by a small spot of an intense green color. At times all our efforts to find the offender by daylight are vain. We must then continue the search in a darkened room with the aid of a good source of artificial light. This can be concentrated into a more intense cone on the surface we are examining. Indeed, the search for a foreign body must never be abandoned until we have made use of this mode of examination by oblique—artificial—light. In a medico-legal case our testimony might be discredited if we failed to do so. Perhaps the most puzzling foreign bodies are the thin, translucent inner hulls of small grains, wheat, rye or rice and the wing-cases of small insects. These find a lodgment in the sulcus made by the juncture of the cornea and the sclerotic with the convexity outward. The air in their concavity becomes exhausted and they are held tightly to

the surface on which they rest. When after some hours they become coated with a little mucus, it often becomes almost impossible to distinguish them from original corneal ulcers and we must touch and move them with the cotton-tipped probe to tell.

DISCUSSION.

Dr. T. J. Dimitry, New Orleans: We have listened to an instructive and enlightening paper that could only come from one of mature years. It is instructive to the layman, and it has impressed you with the fact that we as eye men at least have found one condition that is truly our own, the "removal of foreign bodies from the cornea and from the conjunctiva." The thing that impresses me is that a foreign body on the cornea should be treated by a method in which we wrap a little piece of cotton around a probe or a toothpick and expect to remove the foreign body by that means.

Very great is the danger when you use a cotton probe, unless you use it properly and correctly, as described by Dr. Bruns; you will find you are carrying the foreign body deeper and deeper into the cornea, hence it is very essential that some symtematized plan be used to accomplish real results. When once a foreign body has been removed, and particularly if you have used an instrument in removing it, you always leave an open scar. You have left an area uncovered by epithelium.

After a foreign body has gotten into the eye, the first thing that is usually done by the patient is to take hold of the lid and rub. As he rubs, he rubs the foreign body deeper into the cornea, hence it is buried in the epithelial layer.

After you have removed the foreign body, and realizing that you have a scar there, it is well not to use the albuminous silver preparations, particularly argyrol, because argyrol stains permanently denuded areas to the injury of the eye. If you read the literature on this subject, you will see it scattered throughout the country where men are promiscuously using argyrol, which stains the conjunctiva and stains the cornea. Only within the last week I saw a case where the conjunctiva was horribly stained in a young lady, and that young lady asked if there was no recourse in this case to prevent such a disfigurement as is produced by the silver preparation. I throw that out as a warning to you, and although argyrol may be antiseptic, and it has diffusibility, and it will coagulate albuminous substances, I warn you that it stains the cornea, it stains the conjunctiva, and there is always that possible danger lurking in your mind.

Dr. L. E. Meyer, Thibodaux: I wish to compliment my old professor, Dr. Bruns, upon his able, interesting and instructive paper. I have listened to it with deep interest. It brought me back to thirty-three years ago when I was a student under the now honored Dr. H. D. Bruns at the Charity Hospital.

The question of removal of foreign bodies from the eye is a very important one, especially to the country physician. The knowledge of the country physician in diseases pertaining to the eye is, as a rule, very limited, and that is one of the causes that brings so many patients to country doctors—foreign bodies embedded principally in the cornea and in the conjunctiva.

The method of removing foreign bodies, as suggested by my friend Dr. Bruns, is the one that should be practiced and adopted by every practitioner. It is the only safe and sane method of re-

moving foreign bodies. The one essential thing, before attempting any operation as delicate as the removal of a foreign body from the eye, is that you must remember the cornea is the most sensitive part of the body. The first thing to do, then, is to be sure that the cornea is anesthetized so that the patient will not suffer. The next requisite is that you should have absolute illumination, and the method I have adopted and have used I will endeavor to explain to you.

I place the patient in a chair seated; directly above his head is an electric light. I place a head mirror on my head, and standing in front of the patient with his head held backward, loosen his collar so as not to choke him; then you have the reflection of the electric light in the head mirror thrown directly on the cornea. In this way you have a fine, clear light. In order to increase the advantage and get a perfect light, you can use a magnifying glass and put it in front of the patient's forehead, and the particle, no matter how small it may be, if it be not greater than the point of a pin, will appear large in that magnifying light.

As to the method of extraction, when you fail by using a pledget of cotton, you have to resort to an instrument. The instrument I generally use is the point of an iridectomy knife. I will admit you have to have a very steady hand, but by a little practice and being careful, the foreign body can be easily removed without danger to the patient by that method.

Dr. M. Feingold, New Orleans: I would like to bring out a few points in approval and emphasis of the things told by Dr. Bruns so ably for the guidance of the general practitioner. He emphasized the point that after a foreign body has been removed a bandage should be put on. You will find in a good many textbooks the statement that after a foreign body has been removed it is advisable to order a wash or drops for the use of the patient. We have, after a foreign body has been removed, a denuded surface in the cornea, a tissue which is poorly nourished, and the recommending of washes or drops gives the patient a chance for introducing dirt into his eye. I would emphatically say, seal the eye and do not by any means use any drugs, any solutions which are intended to keep the eye aseptic or kill any bacteria that may be in the conjunctival sac. Let us remember that a superficial wound of the cornea will heal extremely quickly; that the epithelium at the edge of the wound in the cornea proliferates quickly, and, as has been shown by experiments, covers a defect in the cornea within a very short time. For that reason, bandaging or occluding the eye and giving the epithelium a chance to cover the defects is the only logical treatment. The moment the epithelium covers the cornea, that moment all danger of infection has ceased. Of course, opinions may differ as to the exact way of protecting the eye and keeping it closed so as to give the epithelium the chance to regenerate. Dr. Bruns accomplishes this purpose by an occlusive bandage. Some of us do the thing in a little different way, but it all amounts to the same thing: we see that the eye is put at rest, that the eye is protected, that the epithelium has a chance to regenerate and to cover the defect quickly, thus preventing infection. In our clinic the patient is instructed to keep his eye closed on his way home and to take a good long nap on reaching there; during that time the eye is at rest, the epithelium covers the defect, and he wakes up without any further discomfort.

Another thing I should like to speak about is the group of cases that have been handled by the fellow-workers in the shop. After one or more attempts have been made by fellow-workers to remove

the foreign body from the eye with the end of a match, a pocket knife or toothpick, and after repeated failure, the patient comes to the clinic for treatment. Under these conditions we have a cornea which has been more or less badly treated; the wound has been enlarged to a greater extent than it should be, and we must figure that there is a certain amount of contamination of the conjunctival sac. We know what repeated handling does in cases of obstetrics, and the same thing applies to foreign bodies in the cornea and conjunctiva. Repeated handling increases the danger of infection, and for that reason we have to look at the cases in which attempts have been made to remove the foreign body as offering a much more serious prognosis.

Dr. T. C. Moody, DeRidder: I live in an industrial center where there is a large sawmill, and we have lots of cases of foreign bodies in the eye. I had one recently, which was a very slight injury of the cornea, but which resulted in enucleation of the eye. I tried to instruct these doctors about the removal of these foreign bodies. The trouble is they will not take time. They will use any kind of instrument. They do not use any sterilization whatever. As Dr. Feingold has said, they use all kinds of drops and salves in the eye.

I appreciate Dr. Bruns' paper very much. My practice has been the same as his. I always put on a bandage, no matter how slight the injury. Some of these patients object to a bandage, but I tell them that unless they allow me to put on a bandage they must assume the responsibility later if trouble occurs. They wear this bandage for twenty-four hours if I cannot see them again, and I usually write to the doctor to remove the bandage the next morning and instruct the patient to come back if there is any infection.

Dr. A. L. Whitmire, New Orleans: I believe the Graefe knife is the best instrument for use in removing foreign bodies from the cornea. It is not an instrument for the general practitioner to use unless he has studied the anatomy of the cornea. I have been following the method of Starr, of Buffalo, who has been undermining the conjunctiva and making a flap of same for perforations and ulcers of the cornea as though he were doing an enucleation. If the ulcer is extensive or the puncture is near the center, he undermines the conjunctiva entirely around the limbus. He closes the incision with a pursestring suture. I have followed this method in 25 cases. I have used it in one case of gonorrheal ulcer which involved the lower half of the cornea. It was bulging quite a bit, at least 3 diopters. The patient had no discomfort, and five days thereafter it was perfectly clean. She has had no trouble since. Where pocket knives or hat pins are stuck in the danger zone I have had good results by that method. The wounds can be dried after first cocainizing and touching with Lugol's solution and the flap brought over. There is no pain attending the operation, and it looks as if you had done an enucleation or a fat implantation, but the cornea is entirely covered. You can draw the pursestring suture close enough so that you cannot see any cornea. It will recede and you cannot tell in six months time that the eye has been operated on.

Dr. H. D. Bruns, New Orleans (Closing): This is evidently an interesting subject. Of course, there was a great deal I had to say in my paper that the rules of the Society did not allow me to go into. There is one thing that I want to say, however, because I am determined that a friend that has served me so well and faithfully for a long time shall not suffer under any implication that I can remove. There is no method of treatment which, if improperly and wrongly used, wont bring about bad results. You can make a man's

eye sore by dropping into it any solution for an indefinite length of time. I have been using argyrol since it first came out. I long experimented with it and have used it up to this time. I have seen but two cases of staining of the cornea as a result of its use, and both were so slight that the patients were not aware of it. Please note what I said in my paper: If it is used in a fresh solution not stronger than 15 per cent, and not longer than two weeks, it is non-irritating. That is perfectly true. I do not believe any one will have staining of the cornea who does not use argyrol stronger than 15% and longer than two weeks.

Almost the worst case I ever had to manage was one in which cocaine had been unlimitedly used. It was a horrible eye, and it was a very difficult thing to decide what we ought to do to coax it back to health; yet everybody uses cocaine. It is the abuse, and not the use, of remedies that brings about trouble.

THE TREATMENT OF EMPYEMA.*

By F. W. PARHAM, M. D., New Orleans.

Empyema has been known and treated for twenty-six centuries. Hippocrates taught much as to etiology, symptomatology, prognosis and treatment that is fundamental to our present day conceptions (1). Hippocrates recommended examination for fluid in the chest after fifteen days and gave specific directions for locating and making the drainage opening. No substantial progress was had in diagnosis until Angenbrugger's description of percussion in 1761.

Hedblom remarks that the literature of the first eight decades of the nineteenth century is full of discordant notes with regard to treatment, and says that Dumont again in 1825 sounded a pessimistic note, maintaining the possibility of cure by spontaneous absorption, by thickening of the pleura, by sclerosis, by absorption by way of the urine and bowels or by absorption into the blood. Faure reported in 1834 to the Academy of Medicine in Paris eight cases in which operation had been performed, two cured, all others improved, but many of the profession at that time disapproved of these methods. Of fifty patients treated by Dupuytren only four recovered, and when this Napoleon of surgery himself later developed empyema he refused operation, saying he would rather die by the hand of God than by the hand of man.

In searching out the history of the management of empyema, one wonders, when he notes the vicissitudes through which its

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treatment has passed, how methods were followed for a time, then rejected and later on taken up and lauded again. For instance, Colson, in 1836, stated the use of syringes, cannulas and other aspirating devices employed by Dionis, Anel, Scultetus, Bruer and others, had fallen into disfavor. The work of Bowditch in 1852 again brought aspiration into vogue. Yet Walton Martin at the last meeting of the American Surgical Association in 1920, says: "Statistics show, in fact, that more chronic empyemata result from continuous puncture aspiration drainage than from any form of treatment except repeated aspiration." We shall take up this question later on. Most of the procedures now recommended have been used many years ago and discarded. For example, Aupepin (1), in 1810, described a new technic for performing thoracotomy by making the opening in the skin and intercostal tissue at slightly different levels; W. R. Morrison, of Boston, recently reported a successful case in a child with whooping cough thus treated; (2), commending a valve thus formed as more efficient than any mechanical valve. Up to the beginning of the world war the management of empyema had crystallized into almost routine methods of operating for the liberation of pus when found with the exploring needle. The pre-war experience was mostly with pneumococcal empyema, which usually came on after a pneumonia had subsided and only was discovered by a routine examination called for by a recrudescence of fever and recurring respiratory embarrassment. Here already adhesions had formed and the frank pus was well walled off.

The classical maxim, *ubi pus ibi evacua*, was the slogan of the surgeon.

It occurred to me, when I set myself the task of writing this paper, that it might be interesting to review this experience and deduce from it some useful lessons for our guidance in the future.

When, on April 6, 1917, the President declared a state of war with Germany, we were found woefully unprepared for the struggle. Our army was inadequate in numbers and equipment, our medical service inefficient. But the efforts of our government and people bore fruit rapidly, and by the fall of the year 1917, 32 military camps were practically ready for the reception of the young men sent up by the Examining

Boards for military service. This concentration in camp of the flower of our young men afforded an opportunity for the study of disease never offered before under such advantageous conditions. When the medical history of this war now being written by the medical services of the government is finally published we shall have a record of achievement invaluable for the coming generations. There will be recorded most important changes in our conception of many disease processes. For example, many of our notions have been modified regarding empyema. As Moschcowitz expresses it in the Mütter lecture (3), "For years the only facts worth knowing about empyema were that it followed pneumonia and that its treatment consisted in the simple formula, 'incision and drainage.' There was nothing obscure. The pathology and diagnosis were simple, the operation even more simple, so that for decades empyema seemed to offer no opportunity for more intensive investigation."

We all remained in this state of self-satisfied complacency until rudely awakened by the early experiences of the war camps. We should have been warned, for even such a well-conducted hospital as Mt. Sinai in New York had shown for ten years previous to 1914 a mortality of 28 per cent. And, as Moschcowitz remarks, this was not an unusual experience in civil hospitals before the war (3).

So alarming had the mortality become in the fall of 1917 that the Surgeon General appointed an Empyema Commission to investigate and make a report with recommendations. The justification for this was clearly set forth in a report made by Major Evarts A. Graham to the Surgeon-General, compiled from replies made in answer to a questionnaire sent to the principal Base and General Hospitals (3). The average mortality reported from 25 camps was 30.2%. In some it was much higher. At Camp Funston, in 85 cases, it was 85%. At Camp Green, in 92 cases, 53.2%; at Doniphan, 57%; at Wheeler, 65%. Dr. Graham says: "Possible explanation of the striking differences in mortality reported from various camps in the empyema cases are to be found: (1) In the fact that there has been a marked disagreement concerning what cases should be considered as empyema, and (2), in the method of treatment employed. This explanation has much force. Graham (4), quot-

ing from Stone (5), shows the varying mortality of the three series:

First series: Early operation (Oct. 20, 1917, to Jan. 21, 1918), 85 cases, 61.2%.

Second series: Early aspirations and late operations (Jan. 12 to Aug. 10, 1918), 96 cases, 15.6%.

Third series: Early aspirations and late operations (Oct. 18, 1918, to Feb. 14, 1919, 94 cases, 9.4%.

This is the conclusion of the Empyema Commission, which at Camp Lee reduced its mortality to 4.3% by a similar change in the method of treatment. Graham and the Commission admit a difference in virulence may explain the varying mortality in different camps at different seasons. The Commission, however, felt that the chief factor was the method of treatment, and Graham expresses the view that, "as a result of the experience with the Army, there exists now in the United States an almost unanimous feeling that the creation of an open pneumothorax during the acute pneumonic stage of an empyema should be scrupulously avoided."(4). That the influence of virulence in determining the mortality was not suffeiently regarded in drawing conclusions as to the results of treatment in the different periods is shown by the experience of Hamburger and Mayers in Camp Zachary Taylor. The virulence was such that "the extremely rapid development of the empyemas, often well within 24 hours, was demonstrated repeatedly by fluoroscopic and roentgenographic examination" (6).

Death in many cases was no doubt hastened by the surgeon, but these were often cases that would have died if let alone. It was not the knife that killed them, but the toxic condition, which operation could not relieve and only aggravated (10).

In considering the possibilities of treatment all features of a case must be considered.

E. K. Dunham showed some charts at the meeting of the American Surgical Association last year, presenting a survey of the earlier and critical stage of empyema in two or three of the military cantonments. Some of these charts give graphically the more important findings in 149 autopsies. Pericarditis, chiefly suppurative, was present in 65 cases; bilateral pneumonia in 59; empyema or effusion on the opposite side, in 49; pulmonary abscess or gangrene in 22, and mediastinal abscess in

17, were some of the intrathoracic complicating infections. Some of the extrathoracic infections were peritonitis, in 22 cases; erysipelas, in 6; otitis media, in 4; arthritis or abscess, in soft parts, in 9; 45 died in the first three days in hospital, 55 from the 4th to 14th, and 49 from the 15th to 114th day. There were only 15 days in which autopsy failed to reveal associated infection of serious character (8).

These charts, said Dunham, emphasize the importance of not focussing the mind too strongly upon the obvious empyema. This loses significance when compared with the gravity of the coincident infections elsewhere. The condition, as Hamburger remarked as a result of his experience at Camp Zachary Taylor (6), was really one of streptococcus septicemia, with the empyema merely one of its manifestations.

Indeed, if these camp experiences have taught us nothing more, they have emphasized the distinctive differences of the streptococcal and pneumococcal pneumonias and empyemas. Many cases, as just indicated, were hopeless from the beginning; some undoubtedly hung in the balance, the scale turning favorably for some if left undisturbed, a few recovering because of timely and judicious surgical assistance. Good judgment often depends upon a knowledge of the underlying causes of phenomena, and much of our success in practice is based upon the work of the careful experimental investigator. The admirable experimental work of Graham and Bell has furnished a lucid explanation of the danger of early operation in empyema. Their articles embodying their researches are well worth study (9).

These experiments show that a pneumothorax on one side compromises by pressure equally the other side, since, at variance with the common teaching, the mediastinal partition is not fixed, but quite movable, unless made rigid by inflammatory infiltration. Consequently, it is not true, as generally believed, that the sound lung can undertake the work of both. If, therefore, empyema exists on one side, we must be sure that the other lung or pleural cavity is not also involved. In empyema resulting from pneumonia, due especially to the streptococcus hemolyticus, not only is the pleura on the one side more extensively and severely implicated, but many of the bronchioles are plugged with exudate in addition to the air cells

thrown out of commission. Now, if an opening is made in either side, the resulting pneumothorax, much more effective, because, adhesions being not yet formed and the mediastinum being still movable, both lungs become compressed, the already diminished vital respiratory capacity is still further lessened, and, when this becomes reduced to tidal air capacity, fatal asphyxia ends the painful scene. The normal lung in a normal individual can stand a much greater reduction of vital capacity, because the compensatory respiratory mechanism may be brought into play. It must be remembered, too, that the condition of toxemia creates an increased demand for oxygen, so that three factors, intra-pulmonary involvement, intra-pleural pressure and toxemia, urge waiting until the pneumonic process has subsided and the pleural exudate has been localized by the formation of adhesions and the mediastinal partition has been fixed by infiltration

The danger is not so great with the pneumococcal form, as with the streptococcal, because the process is usually more insidious and the empyema is often not discerned until the pneumonia has subsided.

The objects of treatment in empyema are twofold: To prevent mortality; to prevent chronicity.

The division into stages, suggested by Moschcowitz, is excellent: The Formative Stage, when the discharge is sero-fibrinous or sero-purulent; the Acute Stage, when true pus has formed and adhesions have shut off the general pleural cavity and diminished the mobility of the mediastinal septum, and when the pneumonic process has now, too, largely subsided. Failure to stop the process in this stage gives rise to a chronic empyema. In the first stage only a compromised respiration from the pressure of the fluid, which sometimes is poured out in enormous quantities within a few hours, will call for relief, and then only by aspiration, repeated if necessary every 12 to 24 hours. This alone is sometimes curative. In three cases at Camp Lee operation was unnecessary, because the fluid ceased accumulating after repeated aspirations. Stone at Camp Funston reports 35 cases out of 310 cured by aspiration alone. Moschcowitz and others also report similar cases. I recall here the statement quoted from Walton Martin in the early part of this paper, that more chronic empyemata result from repeated aspiration than

from any other form of treatment. It should, of course, only be used to tide the patient over a dangerous period, when respiration is seriously interfered with by fluid pressure. Later, when the pus has become frank, operative treatment may be instituted with advantage, but it is questionable whether the open operation is best in many cases. Certainly, in many pneumococcal cases, it is justifiable, and indeed advisable, in order to obtain and maintain effective drainage.

But I feel sure that Müller in his excellent review of empyema literature in Progressive Medicine for 1920, is too dogmatic and severe. Referring to the methods of suction drainage mentioned in Schiller's article in 1904 (10), he asks "Why did these methods fall into the oblivion of discarded apparatus and methods?" and attempts to answer by quoting from Hartwell, "Gradually, through the constant teaching of thinking masters, this disease has been handled along sound lines of therapeutic technic, founded on a full comprehension of its pathology." Hartwell (11) says: "If the experiences of the past two years are made the basis of the standard treatment of empyema under conditions of pulmonary disease less abnormal than those existing during this trial, a distinct step backward will have been taken." In this he does not agree with some of the authorities who enjoyed abundant opportunities for the treatment of the disease by these suction drainage methods. Moschcowitz, as a result of his experience upon the Empyema Commission at Camp Lee, at General Hospital No. 12, Biltmore, N. C., as Chief of Service at Camp McLellan, and later as consultant in the Surgeon General's office, had his views profoundly altered regarding the treatment of empyema, and strongly advocated a method of suction drainage, preferring a simple thoracotomy to resection, but making a larger opening than that practiced by some others. He contended that empyema should have no mortality in uncomplicated cases. Allen B. Kanavel (12), who had charge of the empyema work during a part of the war, endorses the method of suction drainage, saying: "The establishment of a constant negative pressure offers a much better chance of success, for, if the pressure is maintained, the lung is constantly pulled out until it is restored to its normal position or until adhesions between the parietal and visceral pleura permit the obliteration of the cavity." He thinks aspiration with repeated

puncture is not without danger, owing to the difficulty of avoiding secondary infection. The Empyema Commission, while recommending aspiration repeated as required, at intervals of from one to six days, at first commended the continuous suction drainage after the fluid had become frankly purulent, and illustrates its report with the apparatus used. Stone at Camp Funston improved his statistics by resorting to this plan of treatment. Many others carried out the same technic and numerous apparatus were devised to overcome the difficulties of maintaining air-tight closure of the drainage opening, which is the one serious objection to the method. Walton Martin read an excellent paper before the last meeting of the American Surgical Association (13), in which he contends improper treatment is chiefly responsible for the development of chronic empyema." "I feel sure," he says, "that in the majority of cases there has been a failure to appreciate the fundamental principle involved in treating an infected cavity; that an absolutely free external passage for the exudate must be provided as long as infection is present; that scrupulous cleanliness must be observed in the after-care; that one must always be on the lookout for the possibility of secondary loculi and foci of infection and shut off portions of the drainage tract."

To accomplish these purposes the advocates of resection insist that trochar suction methods are inadequate and that a free opening is necessary. There are two sides to this matter. Even Schiller, writing in 1904 (10), while deprecating suction methods, gives one of the strongest proofs of the efficiency of suction drainage in emptying the pleural cavity. He injected a strong solution of strychnine into the pleural cavity of a dog and then applied the suction apparatus of Perthes. The solution was drawn out so thoroughly that no symptoms of poisoning supervened. Another dog, injected in a similar manner, succumbed in spite of the fact that a free drainage opening was made by resection.

The method of siphon drainage was introduced over thirty years ago by Bülau, improved afterwards by Perthes, who substituted the water pump for producing negative pressure. Many modifications of this method aiming to simplify its application have been devised. These are briefly enumerated here with the references to the articles describing them

Bülau's Method: First advocated by him at the Medical Congress of Vienna in 1890. One of the trochar-suction methods. Lincoln Davis, **Annals of Surgery,** Sept. 1920.

Perthes' Method: Improved Bülau apparatus by applying suction with a water pump (hydrant). Schiller, **N. Y. Med. J.,** June 18, 1904.

McGlannan: Bottle suction apparatus with Brewer tube.

Rosenthal: Trochar thoracotomy. Small, thin collapsible tube over distal end, 24-inch drain tube. Ochsner Year Book of Surgery, 1918. Similar to Ransohoff's method.

New Wight—Harloe Empyema shield and closed method of applying it. **S. G. & O.,** Jan., 1920, p. 94.

Felsen, J.: Simple siphonage apparatus. Ochsner Year Book of Surgery, 1918, with illustrations.

Mozingo's Closed Method Trochar Cannula. J. A. M. A. 71; 2062, Dec. 21, 1918. Used by him at Walter Reid and other hospitals.

Diederich: Trochar Cannula. Employed by him at Camp Pike. Commended by McKenna and Kavanel. **S. G. & O.,** 28; 362, April 19, and **J. A. M. A.** Aug. 31, 1918, 743.

Caples, B. K.: Suction drainage; rather complicated, but apparently very efficient. **S. G. & O.,** 29; 417, Oct. 1919.

Philips' Apparatus: Commanded by Langman and Mix after personal observation. **J. A. M. A.,** 72; 1274, May 3, 1919.

Moschcowitz, A.: A large tube through intercostal incision, airtight closure, combined suction and installation. Similar to method of Empyema Commission. **Am. J. Med. Sciences,** May, 1920, 682.

Morrison:—Valve drainage by flap of tissue covering the end of drainage tube. **Boston Med. & S. J.,** 182; 366, April 8, 1920.

Morelli's Method: A pneumatic, dumb-bell shaped, obturator, with drainage tube running through it, designed to insure against leakage; combined with three bottle suction, controlled by manometer. Recommended highly by Bastiannelli and Lincoln Davis. **Annals of Surgery,** Sept., 1920.

I feel that the arguments against this suction method are not convincing and that the advantages of employing an efficient method are so obvious that only brief argument is necessary.

Suction establishes negative pressure aiding in the lung expansion and thereby forcing out the infected exudate. Employed in conjunction with the coincident introduction of sterile air or fluid, the emptying may be quite thorough, and all this without running the danger of an open pneumothorax.

The introduction of the neutral solution of sodium hypochlorite has established itself as one of the conspicuous accomplishments of the war in the treatment of empyema. Beginning with the demonstrations at the Rockefeller War Demonstration Hospital, it became rapidly adopted in most of the camps and showed itself one of the most potential agents in rapidly subduing the acute infection and preventing the development of chronic empyema. A few disapproving voices have been heard, such as that of Babcock, who testifies that when he left Camp

McPherson there were some 80 cases still draining after a year, although the Carrel-Dakin method had been thoroughly tried. Dr. Duncan Eve (14) seems to have formed a decided prejudice against it, although he confesses to have had a very limited experience with the method. He adopted the opinion of Major W. T. Dodge, Chief of the Surgical Service at Camp Sherman, whom he quotes at length, to prove the futility and, indeed, harmfulness of it in the pleural cavity. A singular statement is that all of ten patients treated with Dakin and formaldehyde solution "were found after several months to have partially collapsed lungs and cavities of considerable size." Contrast this with the statement of Wilensky (15). The case was that of a man with persisting sinus after fifteen months. Foul pus discharged, and the X-ray picture showed "homogeneous shadows covering the whole of the involved side." Radical operation was determined upon. An enormous cavity was discovered reaching from the very top to the very bottom of the thorax. Owing to the large amount of foul pus extensive, Schede thoracoplasty was abandoned until the suppuration could be controlled. The large wound was left wide open and dressed after the Carrel-Dakin technic. In six months the wound had contracted and closed down to a very narrow slit. As six months seemed unreasonably long for a sinus to persist, he determined to carry out the original intention and do the Schede. He found nothing but a narrow gutter and was convinced that if he had waited a little longer the entire wound would have closed. Dr. Dodge gives a long letter from Major F. C. Warnhuis, Chief at Base Hospital No. 99, Hyvres-Var, France, but formerly of Camp Sherman. He corroborates Dodge by referring to sixteen cases just admitted to his hospital, operated on some weeks previously; the histories showed that the eleven unhealed cases had been treated with Dakin, whereas five healed cases had had none. He hoped that Major Dodge would "comment strongly on the misuse of Dakin's solution in empyema." He considered it a crime to use it.

After giving this broadside, my friend, Dr. Eve, quotes from Dr. John H. Gibbon (14) as follows: "Probably the greatest improvement in the treatment of infections of the pleura we owe to Depage, who suggested the sterilization of the pleural cavity by constant irrigation with Dakin's solution."

And yet, Dodge, after a trial of it in eight cases, insists that "the long-established principles of surgery as evolved by many years of experience in civil life and enunciated in practically every text-book on surgery as the proper treatment of empyema, has not been shaken from its foundation by any of the fads and fancies evolved during the war period." Dunbar Newell, in discussing Dr. Eve's paper, gave the most convincing testimony as to its value at Camp Beauregard in Louisiana.

Quite positive is the testimony of Moschcowitz: "It is marvelous to see the effect of a properly-carried out treatment. All pus and odor disappear as if by magic. I have literally dressed one hundred patients and in all the patients combined not half a teaspoonful of pus was found; in fact, in some cases it was difficult to obtain enough secretions to make a proper culture" (3).

Its undoubted effect is shown as well in cases of chronic empyema. While it acts usually by gradually dissolving the exudate, it sometimes loosens large masses of organized inflammatory tissue, as instance the case reported by Evarts Graham (9b). So marked is its effect that its careful use in even old empyemata may obviate the necessity of the formidable decorticating operations, heretofore necessary in obdurate cases. Objection has been urged that in many cases, if empyema is really due, as Moschcowitz has argued, to the rupture of subpleural abscesses, its use will be detrimental owing to the opening up of bronchial tubes. Its irritating effect can, however, be obviated by putting the patient in proper position and using it in very small quantities at first. Very soon larger quantities will be tolerated. Properly carried out the treatment will succeed in rapidly clearing up the adhesions, and in conjunction with the establishment of negative pressure, the lung will expand and the opening will close spontaneously when the infection is destroyed. When the method fails in uncomplicated cases, it is very likely owing to one of the following circumstances:

1. Lack of confidence on the part of the surgeon, due to lack of conviction of the efficiency of the treatment. Enthusiastic faith is necessary.
2. The game has not been played according to the rules. The technic must be accurate and team work is necessary.
3. The Dakin solution must be right.

When the technic has been strictly observed it may still fail for the following reasons:

1. Drainage is not sufficient. Carrel tubes must not be used as drains, they are only for instillation and must be properly placed.
2. Later, drainage must be interfered with by contraction of the drainage opening.
3. Necrotic ribs may keep up the infection in the resection cases. This is an argument in favor of simple thoracotomy.
4. Retention of foreign bodies, such as Carrel tubes, sponges, tampons, rubber dam, sequestra. (Moschcowitz.)
5. Sacculation of the original cavity.
6. Cicatricial cutting off of a portion of the sinus tract.
7. Reinfection from residual intrapulmonary or intra-pleural abscesses.
8. Pleuro-pulmonary and bronchial fistulae.

The evidence properly weighed, then, seems to justify us in accepting the Carrel-Dakin method as one of the surgical demonstrations of the war, not only for wounds in general, but for infection of the pleura as well. So great is its value in acute empyema, that I should hesitate to recommend the radical procedures of Hathaway (17), Lilienthal (16), Delbet and Girode (18), and others, involving an opening sufficient to introduce the hand to clear away all adhesions, followed by cleansing and immediate closure. The Carrel-Dakin method in chronic empyema has shown itself so efficaceous that even in some old empyemas it may be so successful as to make unnecessary the chest sinking operations of Schede and Estlander, or the decortication operation of Fowler and Delorme.

The object of treatment is to obliterate the cavity, either by making the lung to expand or by dropping the chest wall in on to the lung. The first is, of course, the ideal. In most cases it can be accomplished by

1. Proper drainage.
2. By maintaining negative pressure in the pleural cavity by one of the suction drainage methods.
3. By aiding the positive pressure by blow-bottles and calisthenic exercises. Tinker and Wattenburg have shown the great value of this very graphically in a table (19).
4. By sterilization of the cavity acute or chronic with Dakin solution.
5. By checking the nitrogen loss by raising the fuel value of the daily ration of from 3000 to 5000 calories by the addition of milk, eggs, cocoa, etc., to the dietary.

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DISCUSSION.

Dr. M. Bradburn, New Orleans: The very excellent paper of Dr. Parham has covered the field thoroughly. I wish merely to emphasize the points brought out by him. One of these is that the treatment of empyema cases differs with the infecting organism. We must distinguish between the streptococcal and pneumococcal empyemata. In the latter, by the time pus is usually discovered, the acute pneumonic process has subsided, adhesions have formed, and we do not fear the danger of an open pneumothorax with an acutely inflamed lung with consequently reduced vital capacity. In the streptococcal empyemata quite a different state of affairs exists. The effusion occurs early. This frequently must be removed, not because of the toxemia it produces but because of the pressure it exerts. The acute pneumonic process exists and a greatly impaired vital respiratory capacity. No adhesions are present at an early stage and by thoracotomy we greatly jeopardize the patient's chance of recovery by superimposing an open pneumothorax upon the already existing danger of a streptococcal pneumonia, and, as stated by Dr. Parham, a streptococcal septicemia. The treatment, then, in the early, or so-called formative stage of Moschcowitz, is aspiration, on an average about four aspirations at intervals of two to six days. About 13% of these cases are cured by this method of treatment. Aspiration should be employed in the serous and seropurulent stages when the acute pneumonic process exists; open operation is distinctly contra-indicated at this time. In the purulent stage we employ thoracotomy with or without rib resection.

In reviewing the literature of the last three years the point of election for the thoracic opening seems to be about the 8th rib in the post-axillary line, or perhaps the 9th rib in the scapular line. It has been my practice to carry out the Carrel-Dakin method of treatment, inserting three or four Carrel tubes with about twenty perforations, and, in addition, one safety tube to prevent too great intra-pleural pressure from Dakin fluid. I believe that by its use the number of cases coming to the Schede or the Estlander which Tuffier speaks of as ill-advised, will be reduced. Under its use, as Dr. Parham has pointed out, it is not infrequent to be able to remove large membranous masses from the cavity. In a recent case a piece as described by the nurse as being six inches long and rather

thick was removed. Unfortunately this was not saved for section. Dr. Parham cites the instance reported by Evarts Graham where such a membrane on section was shown to be organized tissue. We actually then accomplish in many instances a decortication by the use of Dakin's solution. The capacity of the cavity should be measured from time to time, and especially at the time of separation of these membranes. There is danger, I think, of breaking down adhesions at this time by too great pressure of Dakin's fluid and of injecting the solution into the lung. If this should occur it is not necessary to discontinue the use of Dakin's solution but to diminish the amount and to place the patient on the sound side during the instillation. It has been our practice to instill into the cavity only 1/2 its volume of Dakin's solution. I have not practiced the plastic closure of thoracotomy openings, but when the counts have been less than one to five for seven consecutive days I discontinue the Carrel-Dakin method of treatment and dress the external wound with a dichloramin T solution.

It has been our practice, in addition to the Carrel-Dakin method of treatment, to employ pulmonary gymnastics by the use of Wolff bottles. One word with regard to the treatment of tubercular empyemata. From the experience of Heuer I believe these cases do better under bismuth sterilization. He reports six successes out of seven treated. In the chronic stage again the Carrel-Dakin method of treatment is of value. Wattenberg, in writing of his experience at U. S. Government Hospital No. 26, at Fort Des Moines, where the Carrel-Dakin method of treatment was employed, writes that the major chest collapsing operations must have had their day. The most radical procedure to effect a cure here was the resection of two to two and one-half inches from one or two ribs.

Just one word as to the treatment of bronchial fistulae. The brochial fistulae usually close spontaneously and the expectant treatment should be carried out. The broncho-cutaneous, according to Carl Eggers, may close spontaneously. One word of caution; in closing the broncho-cutaneous opening be careful not to close such an opening if it is draining. A septic focus as an intra-pulmonary abscess may ensue.

Cases where decortication is decided upon, should, according to Tuffier, be preceded by disinfection of the cavity. He states that in this way success formerly unknown is obtained.

Dr. J. A. Danna, New Orleans: I am sorry that Dr. Parham was not able to finish his paper, because I believe the subject taken up is one of extreme importance, and a subject we have learned more about since the war than any one surgical topic.

I would like to review briefly some of the points Dr. Parham has brought out. I would like to call attention to one particular point, a thing which makes an operation for empyema dangerous in a very sick patient—namely, the sudden emptying of the chest and the creation of an acute pneumothorax.

There is a little book written by Morelle of the University of Italy, which has been translated by Lincoln Davis of Boston, that bears on the principles involved in what I am about to speak to you of, and in it you will find some original ideas about some of the suction methods we have adopted in empyema, etc. He makes one point which is the idea of Voltolini, who was the originator of artificial pneumothorax. He says there are two things that make the opening of a chest in acute empyema unsatisfactory. One is the sudden relief of the pressure on the lung. The other is that if you use an aspirator and aspirate sufficiently to pull on the lung,

you create a strong negative pressure which reproduces pleural effusion at a rapid rate. So he has an aspirator which aspirates fluid, and injects air alternately, so that, when you get through aspirating fluid in the chest, the patient has the same amount of intrathoracic pressure in that side of the lung as he had before. In other words, you do not disturb the pressure equilibrium or pressure conditions in the patient's chest. I believe that by emptying the chest in this manner we can relieve the patient of the immediate distress: we can relieve him of the source of the additional toxemia and do it without shocking him.

Dr. H. P. Jones, New Orleans: I was chief of the medical service at Fort Bliss, Texas, during the flu epidemic. We reported by telegram to the families 1700 cases of pneumonia, of which number about 200 died. Most of these cases were postmortems. We found that probably 95 per cent. of the cases died within three or four days of influenzal pneumonia. There was some evidence of fluid in the chest cavity, with pleurisy, very frequently going on to the formation of pus, and there were other complications of influenza. Of the cases which did not die, 47 went to operation for empyema, of which 4 died. Our practice was to aspirate, watch the case very closely, and, then, when the case was ready physically for operation, we did an open drainage operation. In cases where we had bilateral empyema, it was necessary to aspirate both sides, and we frequently did that with the continuous aspiration, and that was simply a trocar with a long tube and bottle underneath the bed, and we would have two of these tubes going continuously without any other mechanical device. It was our practice in the cases of pneumococcic infection to make a good big resection and to put the fingers in the chest cavity and swab out as many pieces of fibrin and exudate as we could reach, feeling that the patient ought to recover. We lost no case of empyema following pneumonia. We paid particular attention to the condition of acidosis in these cases, which was exceedingly common. We fed them up before doing a thoracotomy. We, of course, used bottle blowing, and we tried out various substances for washing out the lung, and we concluded that the Dakin solution was the solution of choice. Certainly, formaldehyde substances for washing out the lung, and we concluded that went to postmortem had been operated on in which formaldehyde was used about the pleural cavity, so that they could not return to normal under any circumstances.

Dr. W. F. Parham, New Orleans (closing): I want to apologize for not giving the subject more adequate attention as my paper was being read. I dwelt especially upon the advantages of Dakin solution, properly carried out, and laid stress on the fact that sometimes it was inadvisable to use the open treatment, but to use the suction method of treatment in connection with the Dakin, and not only was the mortality reduced by that method of treatment, but that also there would be very seldom a recurrence of chronic empyema requiring one of the large operations for filling in the chest and expanding the lung.

HOW APOTHESIN COMPARES WITH OTHER AGENTS USED IN SPINAL ANALGESIA, WITH SPECIAL REFERENCE TO A NEAR ACCIDENT IN A CASE OF PROSTATECTOMY.*

By Dr. PAUL J. GELPI, New Orleans.

I have used spinal analgesia almost exclusively since its first introduction here and my cases now number over 1200. I have employed nearly all the agents used for this purpose and my results are so uniformly good that I consider it as safe as local analgesia.

The technique I employ is the simplest recommended. The puncture is made under scrupulous asepsis in the first, second or third lumbar interspace, depending on the character of the operation. Fifteen to twenty drops of spinal fluid are allowed to escape and twenty minims of sterilized water containing the analgesic agent are slowly injected into the canal. Iodine is applied to the skin puncture which is sealed with adhesive plaster. Apothesin is the drug I am using at present.

For a number of years I used cocaine. Analgesia was perfect, but, from time to time, symptoms of intoxication would manifest themselves, and it is only when the patient's head and shoulders were allowed to fall low that they assumed a serious character. Toxic symptoms were entirely eliminated when I made it a rule to elevate the head and shoulders.

Alypin was used for a time and gave promise of proving useful as a spinal analgesic agent, but with further experience I found that the analgesia was not always perfect and discarded it.

Stovain has been generally used. It does well in spinal analgesia, and my experience with it has been favorable. However, reports of several cases of bladder paralysis extending over a period of several weeks, led me to discard it in favor of something else.

Tropococaine has proved ideal in spinal analgesia. From the standpoint of toxicity, intensity and duration of analgesia, it meets all of the requirements. The position of the patient need not be taken into account. For the most part, my patients were

*Read before the Louisiana State Medical Society meeting, April 19 to 21, 1921.

placed flat on the table without ill effects, and this is a distinct advantage in bladder and prostatic work. Some operators have used it with the Trendelenburg position and have only words of praise for its use in that way.

With the advent of the war, tropococaine could not be secured and the profession welcomed the introduction of apothesin as an analgesic agent. Having used it for over a year in more than one hundred cases, I find it compares favorably with the other agents I have employed.

Analgesia usually appears between 4 and 5 minutes. As to the intensity of the analgesia, I do not think it can be surpassed. This was evidenced in the treatment of extensive chancroidal ulcerations by cauterization. Some of the lesions extended well above a line connecting the superior spinous processes, and the patients always asserted that the operation was painless.

The duration of analgesia leaves nothing to be desired. In one instance the analgesic persisted for one hour and a half. This was a case of pseudo-elephantiasis of the penis and scrotum, requiring extensive resection and plastic repair.

The after effects are negligible. Headache occurs in a certain proportion of cases, but it is usually transient and slight. We meet with nausea occasionally and less frequently with vomiting. Retention of urine occurred in a few cases, but it was transient and it is a question in my mind whether it was not due to reflex action resulting from operation on the genitalia. The rise of temperature following apothesin analgesia is usually slight, in marked contrast with my early observation of spinal analgesia. I must not fail to mention the paralysis of lower extremities occurring with apothesin analgesia. It is usually pronounced, but passes off in a few hours.

For rectal work it is very satisfactory, the relaxation of the sphincters being marked. In urethral work it is also of decided value. In many cases of impervious strictures the complete relaxation of the muscular coat attending the analgesia permits the introduction of a small instrument and makes it possible to perform an internal urethrotomy where the external operation was thought necessary.

From experiments it has been shown that apothesin is equal in value to cocaine and exceeds novocaine. Its toxic action is

identical in kind and degree to novocaine, but materially less than cocaine and free from habit-forming effects. A fatal dose to guinea pigs is several times that of cocaine. Toxic effect is apparently due to depression of the heart. When administered intravenously with adrenalin the depressing effect on the heart is counteracted. Experiments have demonstrated that adrenalin is the most prompt and powerful antidote to apothesin. Reports of cases of death from spinal analgesia shows a great similarity no matter what drug is used.

In the August, 1920, number of the A. M. A. Journal, Duboff reports a death from apothesin. His technic differs from the one we follow. The puncture was made in the second lumbar interspace. 7 c.c. of fluid were removed and mixed with 3 c.c. of distilled water containing one and one-quarter grain of apothesin. The mixture was injected into the spine and a few minutes later patient became ashy, experienced tightness in the chest, respiration became labored and death ensued. Duboff concludes that "The very definite and rapid ascending paralysis culminating in cardiac and respiratory failure, could only be due to the diffusion of the drug to the medullary centers." He further states that he believes "That analgesia with stovain, apothesin and cococaine is as safe as any local anesthetic."

The case which I wish to report was fortunately not fatal.

On December 2, 1920, about noon, I was called by my colleague, Dr. Brierre, to see Mr. A. N., male, white, married, 65 years old, who was suffering with retention of urine. He had not urinated since previous day. His bladder was enormously distended, his face was drawn, was perspiring freely and in great pain. He was exhausted from a sleepless night and repeated strenuous effort to void without result. Rectal examination revealed a very large prostate. A soft catheter had been tried, but unsuccessfully. An attempt to empty the bladder with a large curve prostatic catheter was unsuccessful and immediate operation was advised. At 2 o'clock a suprapubic cystotomy was practiced under spinal analgesia with apothesin. Outside of a moderate headache, there was nothing of note to record. A week later patient was again placed under spinal analgesia with a view of enucleating the prostate. The same dose of apothesin was used. When we were about to drape the sheets, patient complained of feeling weak, "everything in the room looked purple," as he expressed it. He was almost pulseless. Respiration rapidly became labored and his complexion was ashy. As the patient could talk, I ordered one nurse to give him immediately some aromatic spirits of ammonia and apply ammonia to his nostrils, and the other nurse to give him a hypodermic of whatever heart stimulants she had handy. She administered strychnine and digitalin. At that time the pulse in the wrist was not perceptible, but fortunately the patient was able to swallow with some effort. After a short time the pulse reappeared, the respiration became easier, and the

patient stated "That he was getting more light" and gradually conditions returned to normal. The operation was performed and followed by an uneventful recovery. About the same time, I had two similar cases without any untoward symptoms. One, a man about 60, with a large median lobe. The two-stage operation was done, and in view of the presence of small foci of malignancy, a third operation for complete enucleation was done. The other case was one of a man of 64, operated for stone and enlarged median lobe. I have usually made it a point to elevate their heads and shoulders. In this particular case the patient was practically flat on the table, the pillow used being small and flat. Notwithstanding the fact that reports of cases of apothesin spinal analgesia, with the Trendelenburg position have been reported, I believe that in my case the position of the patient very likely had something to do with the symptoms above enumerated.

In conclusion I wish to state that, in my experience, apothesin has shown itself equal to the other analgesic agents employed in spinal analgesia. The incident above described has in no way shaken my faith in the drug. However, in the future, I mean to bear it in mind and always take the precaution of operating with the head and shoulders elevated as I used to do with cocaine analgesia. I have used apothesin exclusively since, and will continue to use it until some other agent is presented to us, either of greater virtue or still less toxicity.

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DISCUSSION.

Dr. E. L. King, New Orleans: During 1919 I was on duty in U. S. A. General Hospital No. 6, with Dr. Babcock, of Philadelphia, who was using a spinal analgesia exclusively except in cases where he had to go so high that he could not use it. At the time, he was using stovain, about ¾ gr. injected, using a fluid that was much heavier than spinal fluid, and immediately after the injection placing the patient with the head down. The operations embraced everything below the diaphragm, even gall bladder and stomach surgery, and these patients uniformly had no trouble during the operation. Once in a great while the anesthesia was imperfect. Then he would sit the patient up and give another ¾ gr. in the spine, turn him down and go to work. He did not seem to worry about giving two doses. He operated on everything, gall bladders, acute and chronic cases of appendicitis, rupture of the appendix, hernias, did all kinds of genito-urinary work, and any work that had to be done on the bones, such as osteotomy, and so forth. He said to me he got absolutely good results in his private work. I asked him what was the youngest patient he had operated on under spinal analgesia, and he replied "a patient two days old for spina

bifida." There were no fatalities traceable to the anesthetic, and in the postoperative convalescence there was no trouble except headache, which seemed rather persistent, and occasionally a case of acute retention of urine.

Dr. W. McL. Hayes, New Orleans: Speaking about spinal anesthesia, I remember very distinctly two important cases in which we had fatalities in the hospital in 1909. One was a case of injury to the right hand. The anesthetic was given high up, and I recollect the patient died within two minutes after the cocain was injected. I recall very well that Dr. Parham was present at the time and he suggested opening the man's abdomen. On the same day, in the hospital, a surgeon was present who is now in this audience, where another patient was given spinal anesthesia for suppression of urine in whom an operation was to be done for decapsulation of both kidneys. This man likewise died. These are the only two cases of death that I saw happen on the same day. The gentleman who was to have decapsulated both kidneys of this patient is present in this room and did not get a chance to do it. Dr. Parham will remember that Dr. DeWalk (?) preferred to give the anesthesia high, and I recollect very well that it was his fifth case. He reported at that time his only fatality.

Dr. Paul J. Gelpi, New Orleans (closing): Referring to what Dr. Hayes has said, we have learned a lesson that we must use spinal analgesia with a great deal of care. I myself do not inject the anesthetic any higher than the last dorsal interspace. I usually go as high as the first lumber space. If you go higher than that you are taking a chance.

BULLETIN OF THE LOUISIANA STATE MEDICAL SOCIETY.

By Dr. P. T. TALBOT, Sec.-Treas.

A regular meeting of the Mississippi Valley Medical Society was held at the Reserve Community Club, Reserve, La., on December 7th, 1921 This was also the annual meeting of the Mississippi Valley Medical Society.

Drs. Geo. S. Bel, of New Orleans, Councilor of the Second Congressional District; Paul J. Gelpi, of New Orleans, Councilor of the First Congressional District; Homer Dupuy, of New Orleans, Councilor-at-Large, and P. T. Talbot, of New Orleans, Secretary-Treasurer of the Louisiana State Medical Society, were present at this meeting.

Dr. Homer Dupuy gave an interesting talk on "The Ear in Childhood"; Dr. Paul Gelpi gave an interesting talk on "The Cystoscope as an Aid to Diagnosis.

On November 30th, 1921, a meeting of the Executive Committee of the Louisiana State Medical Society was held, at which there was quite a large attendance.

The proposed meeting of the Parish Secretaries was discussed, and it was decided that this meeting be held jointly with the next meeting of the Executive Committee. The President, Dr. J. E. Knighton, appointed a Committee on Arrangements for this meeting, and it is hoped that each and every Parish Medical Society Secretary will make preparations to be present in New Orleans at this meeting. A definite date has not yet been set. The meeting, however, will in all probability be early in February.

We have been informed by the President of the Rapides Parish Medical Society, Dr. Fayette C. Ewing, Alexandria, La., that the following appointments have been made for the approaching meeting of the State Medical Society to be held in Alexandria, April 11, 12 and 13, 1922: Dr. Clarence Pierson, Alexandria, La., Chairman of the Arrangement Committee; Dr. Marvin Kappel, Alexandria, Chairman of the Finance Committe; Dr. P. K. Rand, Alexandria, Chairman of the Program Committee.

With the foregoing chairmen in charge of arrangements we have every assurance of a most successful meeting.

I would here like to urge the members of the State Medical Society to get in touch with the respective chairmen of Scientific Sections for the presentation of scientific papers for the annual meeting. It is important that we have the program of each section as early as possible, and this cannot be accomplished without the assistance of the membership. In the two previous issues of The Journal these various chairmen of Scientific Sections were announced, also the numbers of papers allotted to each section.

On January 12, 1922, a joint meeting of the Legislative Committees of the States of Georgia, Louisiana and Mississippi was held in New Orleans, La., at the call of Dr. Frederick R. Green, Secretary of the Council on Health and Public Instruction of the American Medical Association. Dr. Green presided at this meeting. The following doctors were present representing the respective States: Dr. F. K. Boland, Atlanta; Dr. F. Abere,

Dr. A. H. Bunce, Atlanta; Dr. L. C. Allen, Hoschton; Dr. D. R. C. Woodward, Adel, all of Georgia; Dr. H. E. Bernadas, New Orleans; Dr. Homer Dupuy, New Orleans; Dr. W. H. Block, New Orleans; Dr. P. T. Talbot, New Orleans; Dr. J. E. Knighton, Shreveport, from Louisiana; Dr. W. S. Leathers, University; Dr. E. A. Cheek, Canton; Dr. R. S. Curry, Jackson; Dr. Henry Boswell, Sanatorium; Dr. Glass, from Mississippi.

This was an extremely interesting meeting, and among the many important matters that were discussed and acted upon, it was decided that the conference go on record as approving an annual meeting of the chairmen of State Committees on Public Policy and Legislation, to be held under the auspices of the American Medical Association, for the furthering of the various important purposes of these committees, and for the discussion and possible solution of the many problems particular to each individual committee and state.

A vote of thanks was unanimously extended by the members of the conference to Dr. Frederick R. Green for the splendid meeting and the interest manifested by the American Medical Association, through Dr. Green, in the particular difficulties and plans of the states represented.

HAVE YOU PAID YOUR 1922 LOUISIANA STATE MEDICAL SOCIETY DUES? There is no time better than the present. If you have not paid your dues, please send your check in today—$4.00. We are anxious to send your name to the American Medical and Southern Medical Association as a MEMBER OF ORGANIZED MEDICINE. If your parish is not organized send your check to the Secretary-Treasurer of the State Medical Society, direct—No. 1551 Canal Street. If your parish IS organized communicate with the Secretary-Treasurer of your Parish Medical Society.

NEWS AND COMMENT.

THE ORLEANS PARISH MEDICAL SOCIETY held its installation meeting on January 9, at which the following officers for the year 1922 were installed: President, Dr. Wm. H. Block; first vice-president, Dr. E. A. Fossier; second vice-president, Dr. P. Graffignino; third vice-president, Dr. T. A. Maxwell; secretary, Dr. Elizabeth Bass; treasurer, Dr. John A. Lanford; librarian, Dr. S. Chaillé Jamison; additional members, Board of Directors, Drs. C. V. Unsworth, M. J. Lyons and L. A. Ledoux. The annual oration was delivered by Dr. A. B. Dinwiddie, President of Tulane University, and entitled "The Future of the Medical Profession." Music, dancing and refreshments were indulged in at the conclusion of the exercises.

MEETING LAFOURCHE PARISH MEDICAL SOCIETY. At a meeting of this society held at Thibodaux December 30, 1921, the following officers were elected for the year 1922. President, Dr. A. J. Meyer, Thibodaux; vice-president, Dr. J. M. Hubert, Des Allemands; secretary-treasurer, Dr. P. J. Dansereau, Thibodaux; delegate to State Society, Dr. L. E. Meyer, Thibodaux. The society meets subject to call. The next meeting will be held in Thibodaux.

MEETING OF CATHOLIC HOSPITAL MEN OF SOUTH. The first annual conference of the Catholic Hospital Association of the Southern States was held at the Schumpert Sanitarium, Shreveport, La., during December, 1921. Approximately 100 doctors and directors of hospitals representing Texas, Oklahoma, Tennessee, Arkansas and Louisiana attended. Addresses were delivered by Rev. C. B. Mouliner, president of the association, and Dr. J. C. Willis, of Shreveport.

LOUISIANA NURSES BOARD OF EXAMINERS. The semi-annual meeting of this board was held in New Orleans and Shreveport December 12 and 13, 1921. Eighty-two applicants qualified as registered nurses. The board is composed of the following doctors: John T. Crebbin, president; Joseph S. Hebert, secretary-treasurer; George S. Brown, New Orleans, Fred J. Frater, Shreveport, Robert W. Faulk, Monroe.

A MEETING OF THE LOUISIANA STATE BOARD OF MEDICAL EXAMINERS was held in this city December 1, 2, 3, 1921, with the

following members present: Drs. Leon J. Menville, president; Thos. E. Wright, vice-president; J. E. Knighton, E. L. Leckert and Roy B. Harrison, secretary-treasurer. Fourteen physicians appeared for examination in medicine and surgery, eleven being successful. Of this number certificates were granted to nine and two were granted temporary permits, renewable at each meeting of the board, until their completion of citizenship. Applications for reciprocity of two physicians were approved and certificates granted. Nine midwives were examined, seven being successful and granted certificates. The next examinations will be held early in June, dates to be announced later.

Russian Doctors Starving. The American Relief Administration cabled recently from Moscow urging consideration of the possibility of securing general relief in the form of food remittances for doctors. Their starving condition in the famine areas, where their help is badly needed, is seriously interfering with the vitally important medical program of the American Relief Administration officials for the benefit of the hunger-stricken people. In the Volga river basin, where cholera, typhus, malaria, dysentery and other stomach and skin diseases consequent on malnutrition, are rampant, 30,000,000 people are in acute need, if not in danger, due to the failure of last summer's crop. The best results for the large and important medical program of the A. R. A. can be secured by using to the maximum the Russian doctors whose condition especially in the famine area is desperate. The food remittances can be bought at the American Relief Administration offices, 42 Broadway, New York, and call for the delivery to designated individuals in Russia of packages, each costing $10, which contain 117 pounds of nourishing food. The Jewish Joint Distribution Committee, in reply to the appeal on behalf of doctors, has appropriated $25,000 for remittances.

International Sera Standards. The Medical Research Council of Great Britain, Pasteur Institute of France, State Institute of Italy, State Institute of Warsaw, Hygienic Institute of Basle, Pasteur Institute of Brussel, Kitasato Institute of Japan, as well as Austrian and German organizations, will co-operate with the United States Public Health Service, under the auspices of the League of Nations Health Committee, for the Unification of international standards of anti-toxic sera.

This work will be of great importance owing to the confusion caused by the various national standards of measuring the strength of anti-toxic sera.

CIVIL SERVICE EXAMINATIONS. The United States Civil Service Commission announces examination for the following positions: Roentgenologist, associate Roentgenologist, assistant Roentgenologist, junior Roentgenologist, bacteriologist, associate bacteriologist, assistant bacteriologist, junior bacteriologist, and surgeon's assistant, dental, eye, ear, nose and throat Applications will be rated as received until March 31, 1922.

CONGRESS ON MEDICAL EDUCATION, LICENSURE, PUBLIC HEALTH AND HOSPITALS. At the Congress Hotel, Chicago, on March 6-10, inclusive, will be held the next congress on medical education, licensure, public health and hospitals. The Council on Medical Education and Hospitals and Council on Health and Public Instruction of the American Medical Association, Association of American Medical Colleges, the Federation of State Medical Boards of the United States, and the American Conference on Hospital Service will participate.

NEW HEALTH LAW TO BE SOUGHT. Owing to the recent ruling of the court restraining the city health authorities from confining women suspected of having social diseases in the Isolation Hospital, unless they are proven guilty, the Louisiana State Medical Society will seek to have the State Legislature pass a law empowering health boards to isolate suspected cases.

FREE RADIUM CLINIC. According to Dr. Raymond C. Tuck, state health officer of Florida, the state radium clinic established at Jacksonville about a year ago for the treatment of inoperable cases of cancer in women, will hereafter be open for the treatment of both men and women. Treatments are given only on condition that patient is a resident of the state and financially unable to pay for medical services.

THE RED CROSS COURIER, a weekly newspaper of national circulation, is being published by the American Red Cross, and will be its official organ. It is planned to have the publication take the place of all bulletins formerly issued at national and division headquarters.

BALTIMORE TO HAVE HEALTH EXHIBIT. In order to keep the public in closer touch with the Health Department, Commissioner C. Hampton Jones, of Baltimore, is planning a perma-

nent health exhibit. Employes of the various bureaus of the health department are to hold monthly meetings for consultation and a systematic study of the problems they are called upon to face.

DALHOUSIE UNIVERSITY HAS NEW HOSPITAL. In accordance with a previous agreement, Dalhousie University will nominate the staff of the new tuberculosis hospital recently opened in Halifax, Canada. It is understood that the institution will be a part of the teaching plant of the University Faculty of Medicine.

JOURNAL CHANGES NAME. Announcement is made by *The Journal of Orthopedic Surgery*, published in Boston, that it will hereafter appear as a quarterly publication under the name of *The Journal of Bone and Joint Surgery*.

THE ILLINOIS STATE DEPARTMENT OF HEALTH has completed arrangements for a Public Health Institute to be held in Chicago early in March. Programs have been arranged and may be had upon request to the Health Commissioner in Springfield.

NEW ROCHELLE HOSPITAL ADDITION. A new wing to the New Rochelle Hospital to contain sixty beds will be erected through the collection of two hundred and sixty thousand dollars.

FUNDS FOR THE PURCHASE OF THE BIRTHPLACE OF PASTEUR, at Dole, in the Jura, have been supplied by John D. Rockefeller with the intention of making a museum in which will probably be housed an extensive medical and surgical library with authentic documents of Pasteur.

MUST BE REASONABLY CLEAN. The U. S. Public Health Service states that, although the menace of the vermin-bearing immigrant will practically disappear when typhus and plague subside in Europe, it will continue to insist that travelers to this country must be reasonably clean when they embark, regardless of any infection to which they are known to have been exposed. This will be done as an extra precaution to prevent transmittal of these diseases to this country.

GOVERNMENT NEEDS WORKERS IN REHABILITATION. The United States Civil Service Commission calls attention to the urgent need for reconstruction assistants and aides in physiotherapy and occupational therapy, trained nurses and physicians, to serve in hospitals and other establishments of the United States

Public Health Service and the Veterans' Bureau, in the care and rehabilitation of men injured in the world war. Application for these positions will be received until further notice. Full information and application blanks may be obtained from the U. S. Civil Service Commission, Washington, D. C., or from the Secretary of the local Board of Civil Service Examiners at the post office or customhouse in any city.

THE ROCKEFELLER FOUNDATION announces that the International Health Board has accepted an invitation to co-operate in carrying out the general scheme of reorganization of the public health activities of the Philippine Islands, which was recently made public by the President of the Senate, Manuel Quezon.

MEDICAL SCHOOL MERGER. The board of regents of the University of Michigan, at a meeting held December 9, voted to merge the homeopathic medical school with the school of medicine of the university. The homeopathic school last year graduated seven students.

MEETING AMERICAN RED CROSS. The American Red Cross held its seventeenth annual meeting at its national headquarters, Washington, D. C., December 7. Officers elected for the year 1922 are as follows: President, President Warren G. Harding; vice-presidents, Robert W. DeForest and William H. Taft; treasurer, Eliot Wadsworth; counselor, James M. Beck; secretary, Mabel T. Boardman

YALE UNIVERSITY MEDICAL SCHOOL TO HAVE NEW BUILDING. Announcement has been made of the appropriation of $1,320,000 for the erection of a new building for the Yale School of Medicine by the Yale Corporation and the Sterling trustees from the Sterling funds, which will be known as the Sterling Hall of Medicine. The building will contain a library of 12,000 volumes, auditorium, rooms for unmarried instructors and laborers, as well as an animal house and power house adjoining. This is in accordance with the university's reorganization plan to expand the School of Medicine.

THE DEROALDES PRIZE of the American Laryngological Association is now open for competition to non-members of the association. The prize is a gold medal valued at $150, and is

offered for the best original thesis relating to Laryngology or Rhinology. Competitors must have their theses in the hands of Dr. D. Bryson Delavan, 40 East Forty-first street, New York City, chairman of the prize committee, prior to April 1, 1922.

A CONTRACT FOR A NEW MEDICAL BUILDING at the University of Alabama has been let. It will cost $82,000 and it is proposed to begin its erection at once.

A SPECIAL MEETING of the Orleans Parish Medical Society was held on January 17 to consider the question of the physician's license tax. After much discussion it was decided to refer the matter to the legislative committee of the society with instructions to act in concert with the similar committee of the State Society. It was agreed to seek the co-operation of the secretaries of the various parish societies.

REMOVALS: Dr. F. T. Beatrous announces the removal of his offiice to 1232 Maison Blanche Building.

MARRIED. On December 26, 1921, at Forest Hill, Long Island, Dr. Victor C. Smith and Miss Beulah Roth, both of New Orleans.

DIED. On Dec. 30, 1921, Mr. A. B. Tipping, late Supt. of Touro Infirmary, aged 42 years.

On Dec. 30, 1921, at Houma, La., Dr. C. M. Menville, aged 63 years.

On Jan. 9, at Brandon, Miss., Dr. A. J. McLaurin, aged 71 years.

On Jan. 15, in New Orleans, Dr. Josiah I. Hunter, aged 56 years.

On Jan. 19, in New Orleans, Dr. Gustave Keitz, 73 years of age.

PUBLICATIONS RECEIVED.

W. B. SAUNDERS COMPANY, Philadelphia and London.

Medical Clinics of North America, September, 1921, Vol. 5, No. 2.

The Spleen and Some of Its Diseases, by Sir Berkeley Moynihan, M. D.

Collected Papers of the Mayo Clinics, Vol. XII, 1920.

History of Medicine, by Fielding H. Garrison, A. B., M. D., Third Edition.

Diseases of the Skin, Henry W. Stelwagon, M. D., Ph. D., with the assistance of Henry Kennedy Gaskill, M. D. Ninth Edition.

The Medical Clinics of North America, Vol. 5, No. 3, November, 1921.

The Surgical Clinics of North America, Vol. 1, No. 5, October, 1921, and Vol. 1, No. 4, December, 1921.

WILLIAM WOOD & COMPANY, New York.

Text-Book of Embryology, by Frederick R. Bailey, A. M., M. D., and Adam Marion Miller, A. M., fourth edition.

F. A. DAVIS COMPANY, Philadelphia.

Essentials of Laboratory Diagnosis, by Francis A. Faught, M. D., Seventh Edition.

Ringworm and Its Surgical Treatment, by John P. Turner, M. D.

THE MACMILLAN COMPANY, New York.

The Glands Regulating Personality, by Louis Berman, M. D.

J. B. LIPPINCOTT COMPANY, Philadelphia and London.

Ephraim McDowell, "Father of Ovariotomy" and Founder of Abdominal Surgery, by August Schachner, M. D., F. A. C. S.

Clinical Diagnosis, by Charles Phillips Emerson, A. B., M. D., Fifth Edition.

PAUL B. HOEBER, New York City.

Acute Epidemic Encephalitis, an investigation by the Association for Research in Nervous and Mental Diseases.

WM. J. DORAN.

Episcopal Hospital Reports, Vol. 5, 1920.

THE YEAR BOOK PUBLISHERS, Chicago.

The Practical Medicine Series, Vol. 4, Pediatrics, by Isaac A. Abt, M. D., and Orthopedic Surgery, by Edwin W. Ryerson, M. D., under the general editorship of Charles L. Mix, M. D.

The Practical Medicine Series, Gynecology, by Emilius C. Dudley, A. M., M. D., LL. D., **Obstetrics,** by Joseph B. DeLee, A. M., M. D., Vol. 5, Series of 1921.

MEDICAL LIFE COMPANY, New York.

The Life of Jacob Henle, by Victor Robinson, M. D.

WASHINGTON GOV'T. PRINTING OFFICE, Washington, D. C.

Public Health Reports, Vol. 36, Nos. 44, 45, 46, 47.

MISCELLANEOUS.

Panama Canal Press, Mount Hope, Canal Zone. Proceedings of the Medical Association of the Isthmian Canal Zone, Vol. XI, Parts 1 and 2, January, 1918, to December, 1918, Vol. XII, Parts 1 and 2, January to December, 1919.

Report of the Philippine Health Service, January to December, 1920, inclusive. Manila Bureau of Printing.

The Rockefeller Foundation, Annual Report, 1920. The Rockefeller Foundation.

REPRINTS.

Cancer a Mutiny of Body Cells, by L. Duncan Bulkley, A. M., M. D.

Les Grandes Formules Modernes De La Nutrition, by Th. Merrill et H. Violle.

Nos. 146, 231, 285, 390, 349, 406, 410, 421, 426, 439, 498, 505, 522, 547, 551, from Public Health Reports.

MORTUARY REPORT OF NEW ORLEANS.

Computed from the Monthly Report of the Board of Health of the City of New Orleans for December, 1921.

CAUSE.	White.	Colored.	Total
Typhoid Fever	1	1	2
Intermittent Fever (Malarial Cachexia)	1	3	4
Smallpox			
Measles			
Scarlet Fever	1		1
Whooping Cough	1		1
Diphtheria and Croup	1	1	2
Influenza	3	3	6
Cholera Nostras			
Pyemia and Septicemia			
Tuberculosis	38	34	72
Cancer	26	9	35
Rheumatism and Gout	1	2	3
Diabetes	7	1	8
Alcoholism	1	1	2
Encephalitis and Meningitis	3		3
Locomotor Ataxia	2		2
Congestion, Hemorrhage, Softening of Brain	29	17	46
Paralysis	4	4	8
Convulsions of Infancy	1		1
Other Diseases of Infancy	13	11	24
Tetanus		1	1
Other Nervous Diseases	5	1	6
Heart Diseases	58	28	86
Bronchitis		4	4
Pneumonia and Broncho-Pneumonia	24	22	46
Other Respiratory Diseases	1		1
Ulcer of Stomach		1	1
Other Diseases of Stomach	1	1	2
Diarrhea, Dysentery and Enteritis	6	13	19
Hernia, Intestinal Obstruction	3	3	6
Cirrhosis of Liver	3	2	5
Other Diseases of the Liver	5	3	8
Simple Peritonitis			
Appendicitis	4	3	7
Bright's Disease	13	12	25
Other Genito-Urinary Diseases	14	15	29
Puerperal Diseases	5	4	9
Senile Debility	2	2	4
Suicide	6		6
Injuries	29	15	44
All Other Causes	23	21	44
Total	334	238	572

Still-born Children—White, 15; Colored, 13; total, 28.

Population of City (estimated)—White, 290,000; colored, 110,000; total, 400,000.

Death rate per 1000 per annum for month—White, 13.82; colored, 25.96; total 17.16. Non-residents excluded, 14.73.

METEOROLOGIC SUMMARY (U. S. Weather Bureau).

Mean atmospheric pressure 30.13

Mean temperature ..... 61.

Total precipitation ..... 3.49 inches

Prevailing direction of wind, southeast.